

# THE NATCO TWO APARTMENT HOUSE







# THE NATCO TWO-APARTMENT HOUSE

A SELECTION OF  
DESIGNS SUBMITTED IN COMPETITION  
BY ARCHITECTS

WITH ILLUSTRATIONS  
OF HOUSES BUILT OF NATCO HOLLOW TILE

TOGETHER WITH ARTICLES  
TREATING OF DESIGN, PLAN, AND CONSTRUCTION  
OF DEPENDABLE HOUSES OF  
MODERATE COST



PRICE, FIFTY CENTS

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BY  
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BOSTON



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# THE NATCO TWO-APARTMENT HOUSE

## FOREWORD

**N**ATCO Tile Construction has long since passed the experimental stage. Its increasing use in all types of buildings amply demonstrates this fact. It is employed in the walls of palaces and bungalows; in the church, library, club, mercantile building, and farm group; in fact, in all buildings where economy combined with dependable construction are the requisites.

It is the purpose of the National Fire Proofing Company—makers of Natco Tile—to conduct each year a competition among architects for designs of dwellings of various types, and present in book form a selection of the designs so submitted. It may fairly be claimed that the principal object of this work, which involves a considerable expense, is to encourage the building of houses that are good in design and sound in construction and, withal, reasonable in initial cost and upkeep.

The type chosen for the competition with which this book has to deal was the Two-apartment House. A house of this type should prove attractive to many who are obliged to practice economy in acquiring a home since the owner may occupy one part and rent the other. If Natco Tile Construction is employed the investment is secure and the house dependable.

The character of the house which was selected for treatment is given in detail in the program which governed this competition.

## THE PROGRAM

**T**HE problem calls for a Two-apartment House, the walls and foundations of which are to be built of Natco XXX Hollow Tile. The lot has a frontage of thirty feet and a depth of one hundred feet. The land is level. The location may be assumed in the residential section of any city. The house should be so designed that it may be located within a block with access to rear entrance from street since there is no alley at rear of lot. The architectural type and plan arrangement and the exact location of the house upon the lot are left to the designer. There is to be a basement and two floors. The treatment of the roof is optional with the designer. The basement is to be equally divided between the two families that are to occupy the house. Provision should be made for separate heating plants, laundries, etc. Each family is to be provided with five rooms and a bath on one floor, although if space permits an additional small room may be added to the second floor. At the



rear entrance separate stairs should lead to the divisions of the basement and another stairway to the second floor.

Invention in relation to plan is desirable in this competition. It would be especially interesting if the contestants would frankly acknowledge the need of clothes' drying porches and make provision for them. Also the designer may give consideration to the demand on the part of tenants for porches—open or enclosed—on the front, provided they can be successfully incorporated in a design for a house of this class. These features are submitted only for consideration and are in no sense mandatory. Designs in which they are successfully combined will be given special consideration by the jurors. The total cubage of the house and porches must not exceed forty thousand feet. For the purpose of this competition the price per cubic foot is set at eighteen cents, this being the estimated cost at which houses of the type specified can be built of Natco Hollow Tile in almost every part of the country.

Measurements of the house must be taken from the outside face of exterior walls and from the level of basement floor to the average height of all roofs. Porches and other additions are to be figured separately at one-fourth (twenty-five per cent) of their total cubage, except the clothes' drying porches. The latter need not be included in the cubage.

The jury will give consideration:

*First*, to the excellence of the de-

sign and its fitness to the materials employed.

*Second*, to the excellence of plans.

It is hoped that the designs submitted in this competition will show a careful study of the problem and that the contestants will think of the house as one to be actually built. While originality in design is desired, attention is particularly called to the fact that these houses are presumed to meet a practical need in every American city, and that they should in all respects be a distinct improvement over the average house of this class which is put up by the speculative builder.

The employment of Natco Hollow Tile for the walls of apartment houses is in harmony with the spirit of the present time, which is to eliminate inflammable construction within city limits. The material itself, as is well known, meets successfully the most exacting architectural requirements that may be imposed upon it. The walls are fireproof and the entire house can be made fireproof by the use of tile for partitions and floors at a moderate additional expense. Natco Hollow Tiles being heavily scored on all sides permit of stucco for an outside finish, and plaster applied direct to the tile for interior finish.

*For the design placed first there will be given a prize of \$500.*

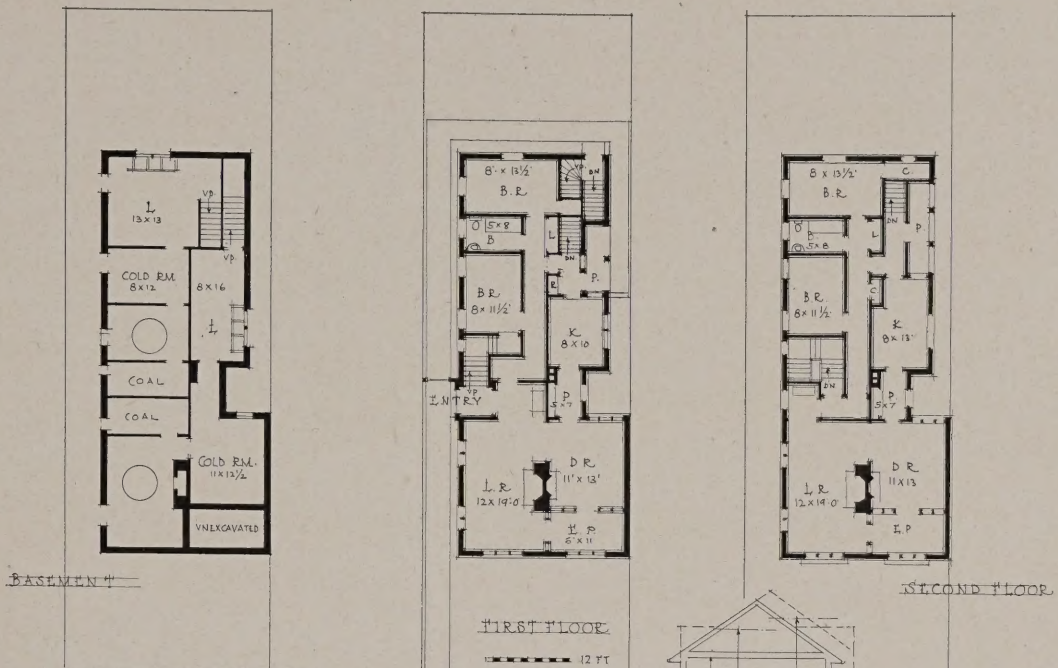
*For the design placed second a prize of \$250.*

*For the design placed third a prize of \$150.*

*For the design placed fourth a prize of \$100.*

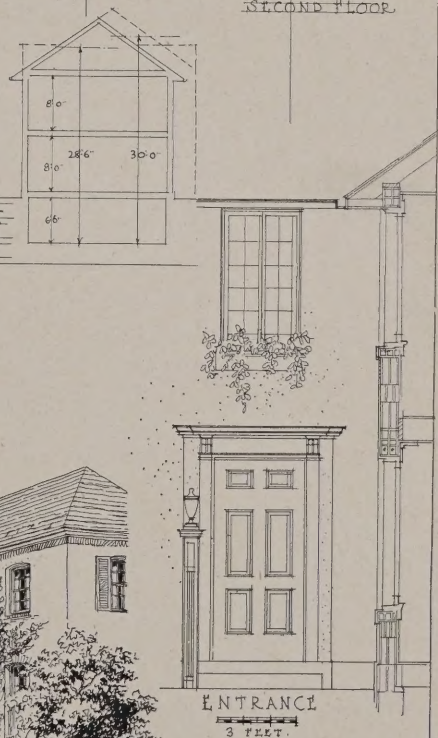


# THE NATCO TWO-APARTMENT HOUSE



CYBAGE	
LIVING PART	
20 1/2 x 25 x 30 =	15 375 G. Ft.
REAR PART	
27 x 38 x 28 1/2 =	23 826 " "
VNEXCAVATION UNDER FRONT PORCH 6 1/2 x 11 x 5 =	214 G. Ft.
BREAK OFF PANTRY	
3 x 6 1/2 x 24 =	468 " "
(15 375 + 23 826) - (214 + 468) =	38 519
38 519 G. Ft. x 18 =	6 933.42 COST

DESIGN FOR A TWO APARTMENT HOUSE TO BE BUILT OF NATCO XXX HOLLOW TILE

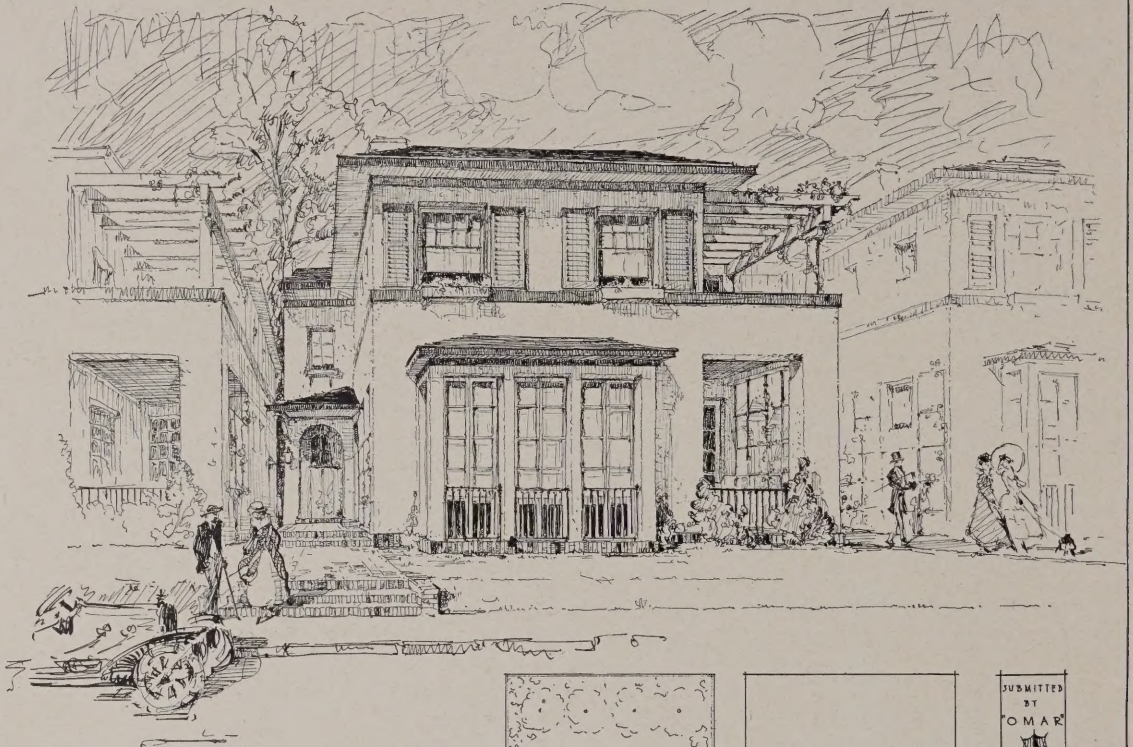


SUBMITTED BY

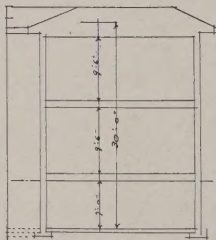
FIRST-PRIZE DESIGN  
Submitted by OLAF WILLIAM SHEL GREN  
1314 Prudential Building, Buffalo, N. Y.



# THE NATCO TWO-APARTMENT HOUSE

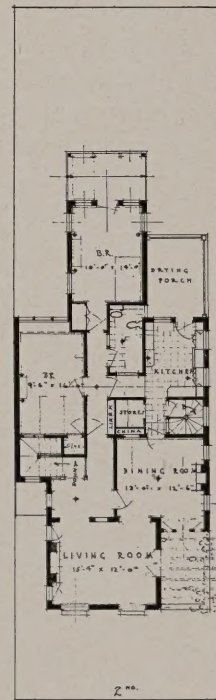
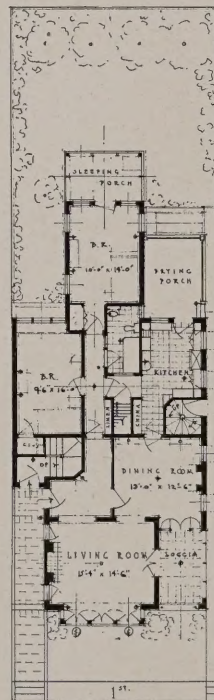
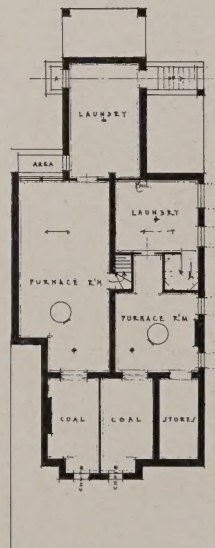


SCALE  
0 5 10 15 20 25 30

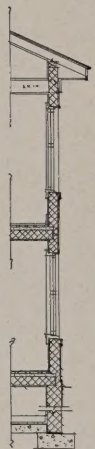


CUBAGE

A: 17'-0" x 19'-0"	=	306
D: 28'-0" x 24'-6"	=	686
C: 19'-0" x 11'-6"	=	195 1/2
P: 7'-0" x 6'-6"	=	45 3/4
#1: 7'-0" x 11 1/2" (1/4)	=	20 1/4
#2: 7'-0" x 11 1/2" (1/4)	=	20 1/4
		1273 1/4
		30
E: 12'-6" x 2'-0" x 13'-0"		38,197 1/2
		420
		38,647 1/2
		ea. 37'



SUBMITTED  
BY  
OMAR

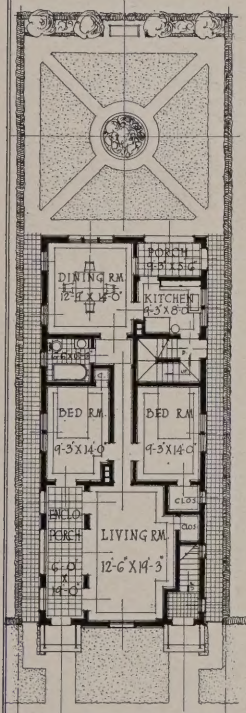
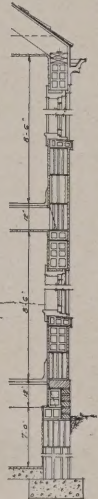
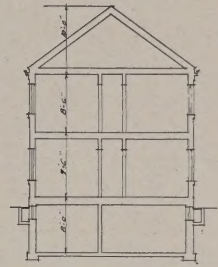
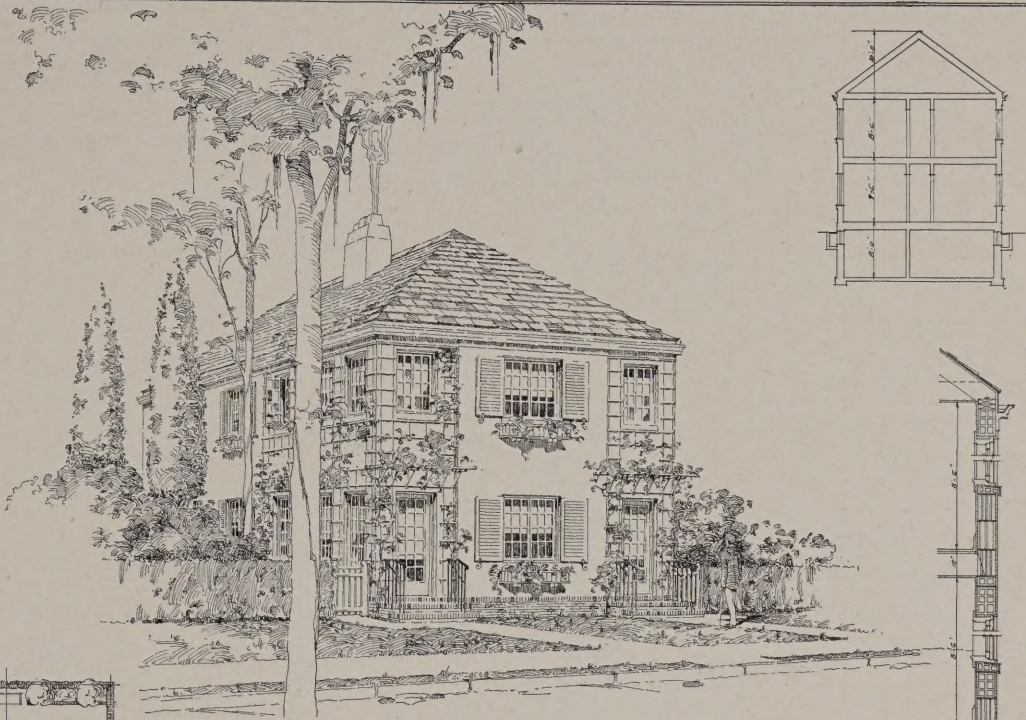


DESIGN FOR A TWO-APARTMENT HOUSE TO BE  
BUILT OF NATCO XXX HOLLOW TILE.

SECOND-PRIZE DESIGN  
Submitted by HUGH MACOMBER FERRISS  
38 Union Square, New York, N. Y.



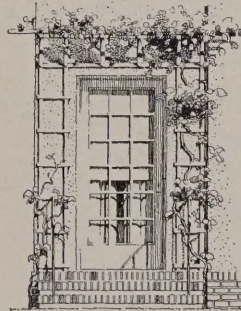
# THE NATCO TWO-APARTMENT HOUSE



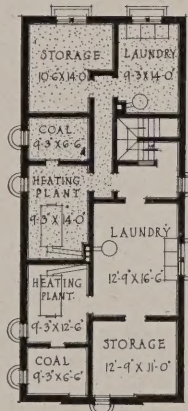
FIRST FL. AND PLOT PLAN

CVBAGE  
 WIDTH 24'-0" - LENGTH 56'-6"  
 HEIGHT FROM BASEMENT FL.  
 TO AVERAGE HEIGHT OF ROOF  
 31'-0" - TOTAL CVBAGE 42,036  
 CVBAGE OF FRONT PORCHES 2,340  
 CVBAGE OF REAR PORCHES 1,080  
 $\frac{3}{4}$  TOTAL CV OF PORCHES = 2,565  
 $42,036 - 2,565 = 39,471$  CV.FT.

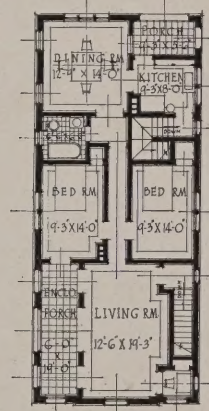
SUBMITTED BY  
 AL COVE, ARCH'T.



DETAIL OF  
 ENTRANCES



BASEMENT FLOOR PLAN



SECOND FLOOR PLAN

SCALE OF PLANS  
 0 10 20 30 40 50 60 70 80 90 100

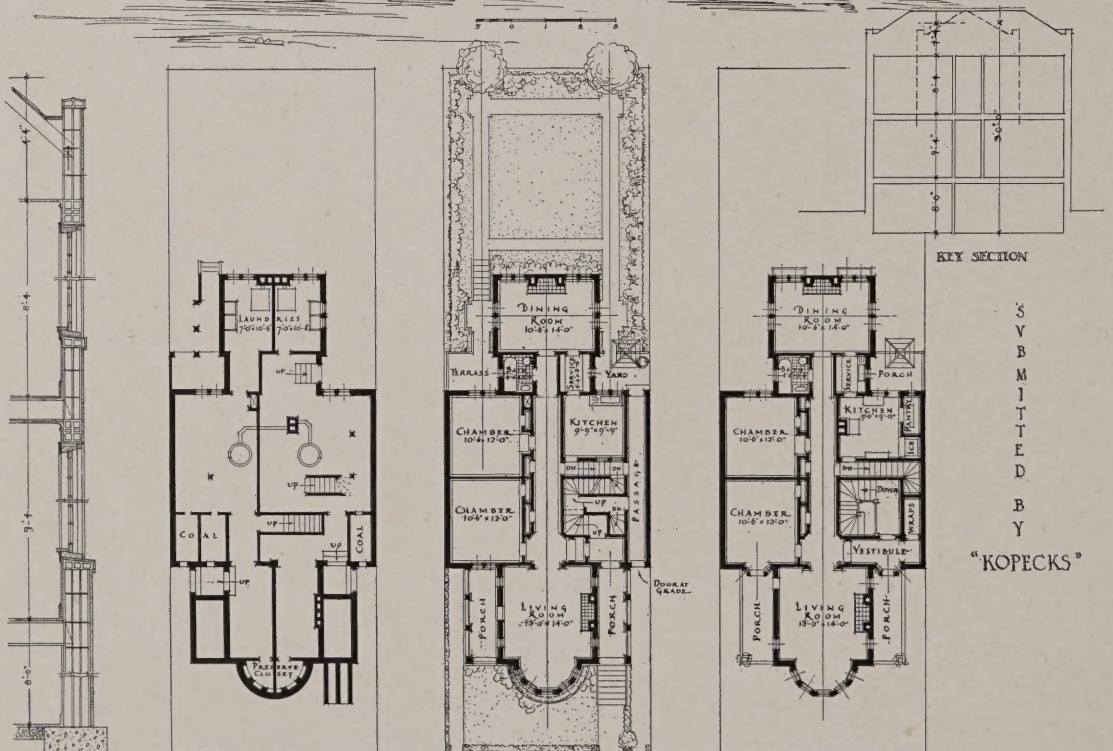
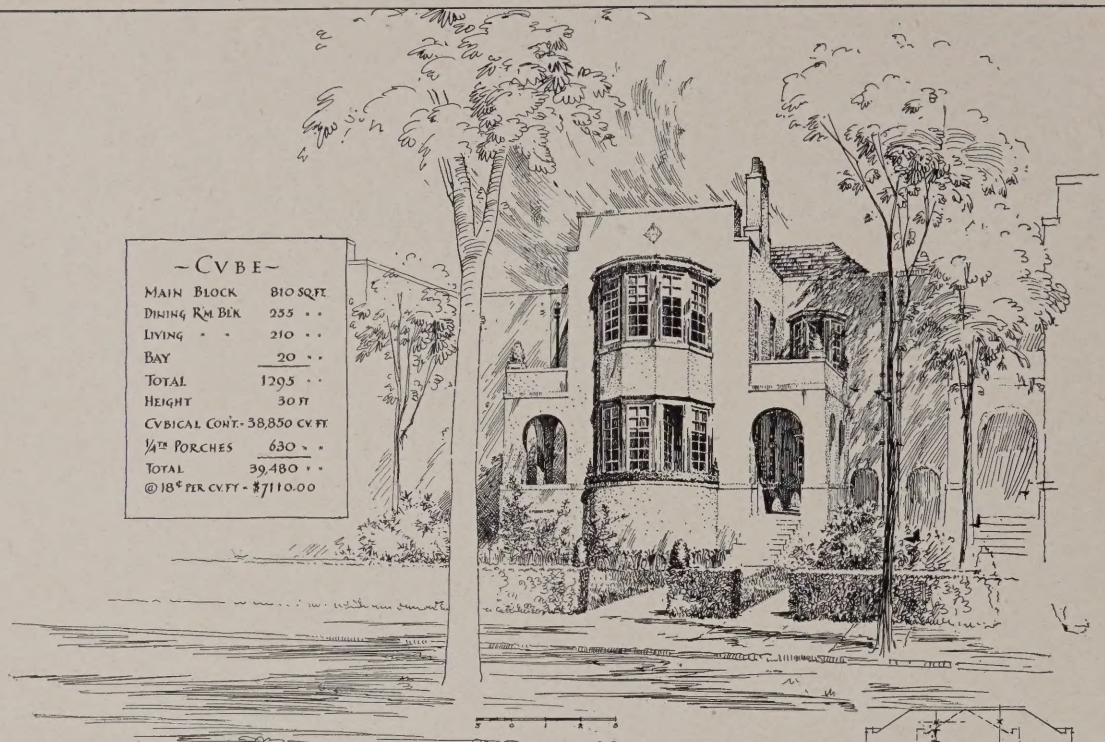
DESIGN FOR A TWO APARTMENT HOUSE  
 TO BE BUILT OF "NATCO" XXX HOLLOW TILE

THIRD-PRIZE DESIGN  
 Submitted by J. IVAN DISE  
 418 West 118th Street, New York, N. Y.



# THE NATCO TWO-APARTMENT HOUSE

- CVBE -	
MAIN BLOCK	810 SQ FT
DINING RM Bk	255 ..
LIVING ..	210 ..
BAY	20 ..
TOTAL	1295 ..
HEIGHT	30 FT
CVBICAL CONT.	58,850 CV FT
1/4 <sup>th</sup> PORCHES	630 ..
TOTAL	39,480 ..
@ 18¢ PER CV FT - \$7110.00	

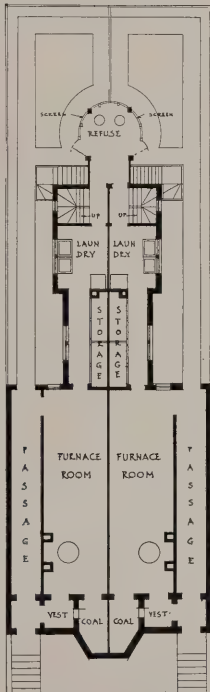
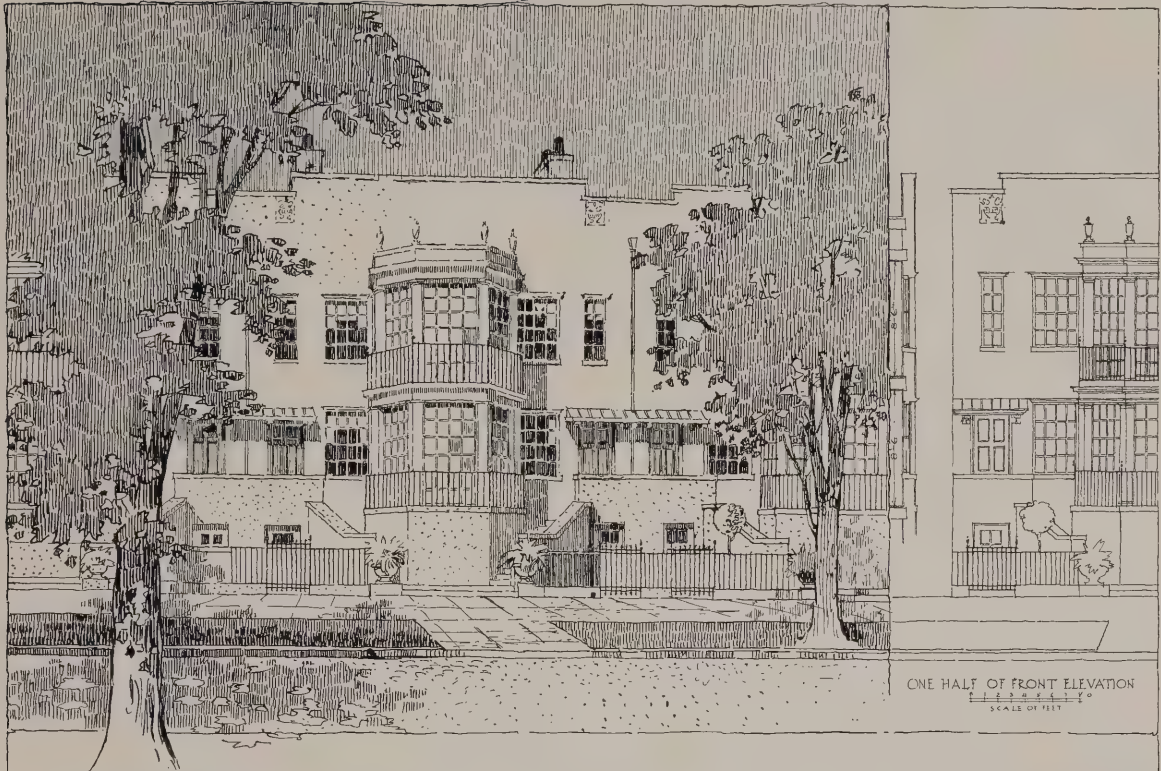


DESIGN FOR A TWO APARTMENT HOUSE TO  
BE BUILT OF NATCO XXX HOLLOW TILE & C

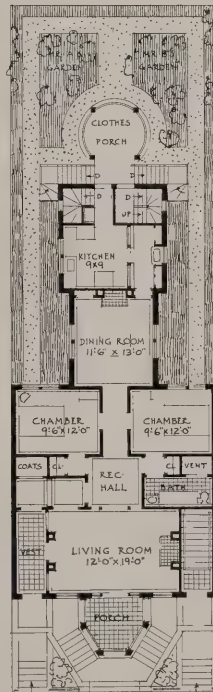
FOURTH-PRIZE DESIGN  
Submitted by MAURICE FEATHER  
129 Langdon Avenue, Watertown, Mass.



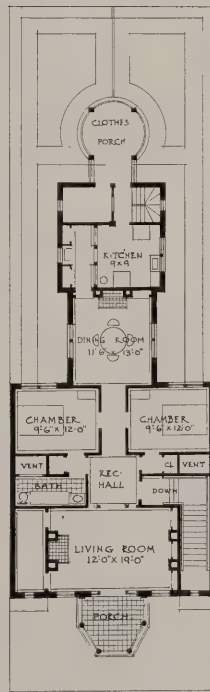
# THE NATCO TWO-APARTMENT HOUSE



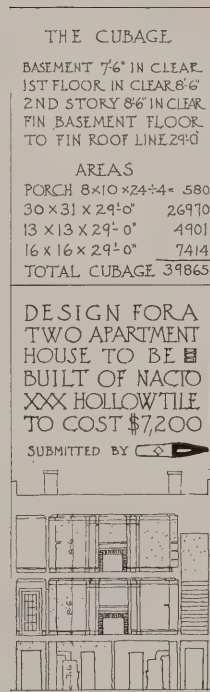
BASEMENT FLOOR PLAN



FIRST FLOOR PLAN



SECOND FLOOR PLAN



## THE CUBAGE

BASEMENT 7'6" IN CLEAR  
1ST FLOOR IN CLEAR 8'6"  
2ND STORY 8'6" IN CLEAR  
FIN BASEMENT FLOOR TO FIN ROOF LINE 29'0"

## AREAS

PORCH 8'x10'x24'÷4 = 580  
30'x31'x29'÷0 = 26970  
13'x13'x29'÷0 = 4901  
16'x16'x29'÷0 = 7414  
TOTAL CUBAGE 39865

DESIGN FOR A  
TWO APARTMENT  
HOUSE TO BE  
BUILT OF NATCO  
XXX HOLLOW TILE  
TO COST \$7,200

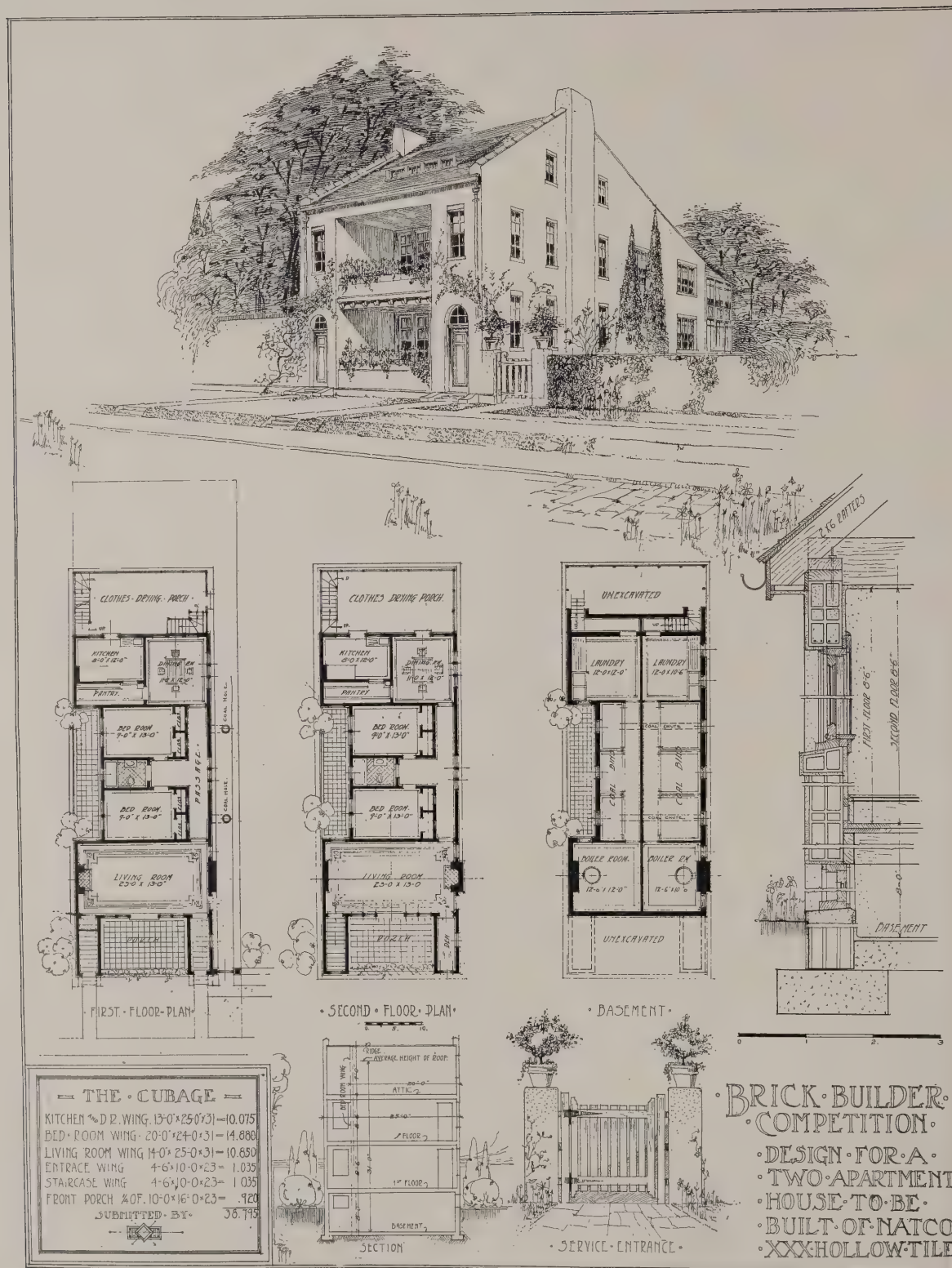
SUBMITTED BY

## MENTION DESIGN

Submitted by CLEON M. HANNAFORD  
Boston, Mass.



# THE NATCO TWO-APARTMENT HOUSE



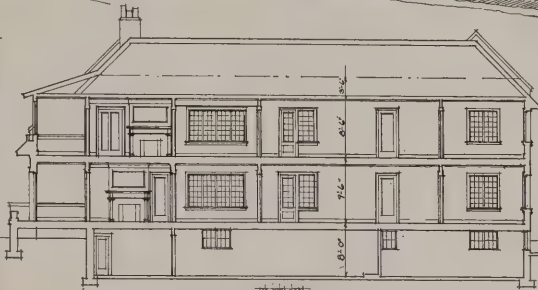
MENTION DESIGN  
Submitted by FREDERICK J. FEIRER  
117 Overpeck Avenue, Ridgefield Park, N. J.



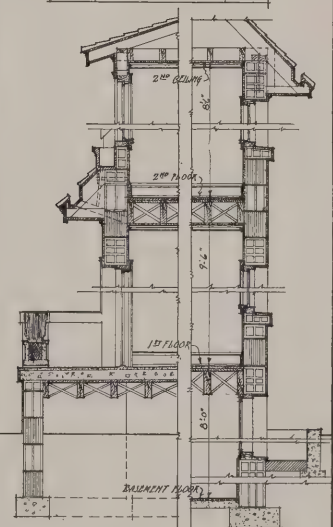
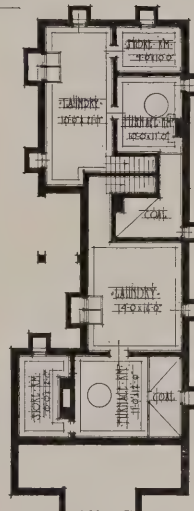
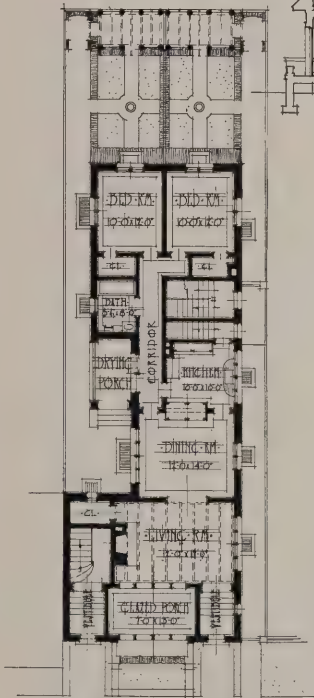
# THE NATCO TWO-APARTMENT HOUSE



ADMITTED BY



CUBAGE	
1254 SQ. FT. OF HOUSE	
24'6" HEIGHT	
27139 CU. FT.	37139
102 SQ. FT. OF VERANDAH	
18'0" HEIGHT	
1836 CU. FT.	1836
115 SQ. FT. OF CLAYED PORCH	
12'0" HEIGHT	
1380 CU. FT.	
25415%	254
TOTAL CUBAGE	71479



DESIGN FOR A TWO-APARTMENT HOUSE  
TO BE BUILT ON

NATCO XXX HOLLOW TILE

MENTION DESIGN  
Submitted by WILLIAM H. FLANIGAN  
Woodbury, N. J.



PERSPECTIVE.  
SHOWING TWO HOUSES.

SECTION A-C TO BE  
A FOOT TAN IN  
COLOR. DAYS  
TO HAVE CAST  
STONE TRAM-  
PATTERN WORK  
IN BRICK &  
TILE HEAVY.  
OLD ENGLISH.  
SLATE ROOF.  
COPPER GUTTER.

KEY SECTION.  
Scale 1/8" = 1'-0"

SECTION.

FIRST FLOOR PLAN.

SECOND FLOOR PLAN.

SECTION A-C. 429 FEET  
SECTION D-C. 128 " "  
SECTION C-D. 440 " "  
SECTION D-D. 429 " "  
TOTAL 1426' 0" X 28'-3 9/16" 8' 0"  
SECOND STORY PORCH. BALCONY.  
TERRACE

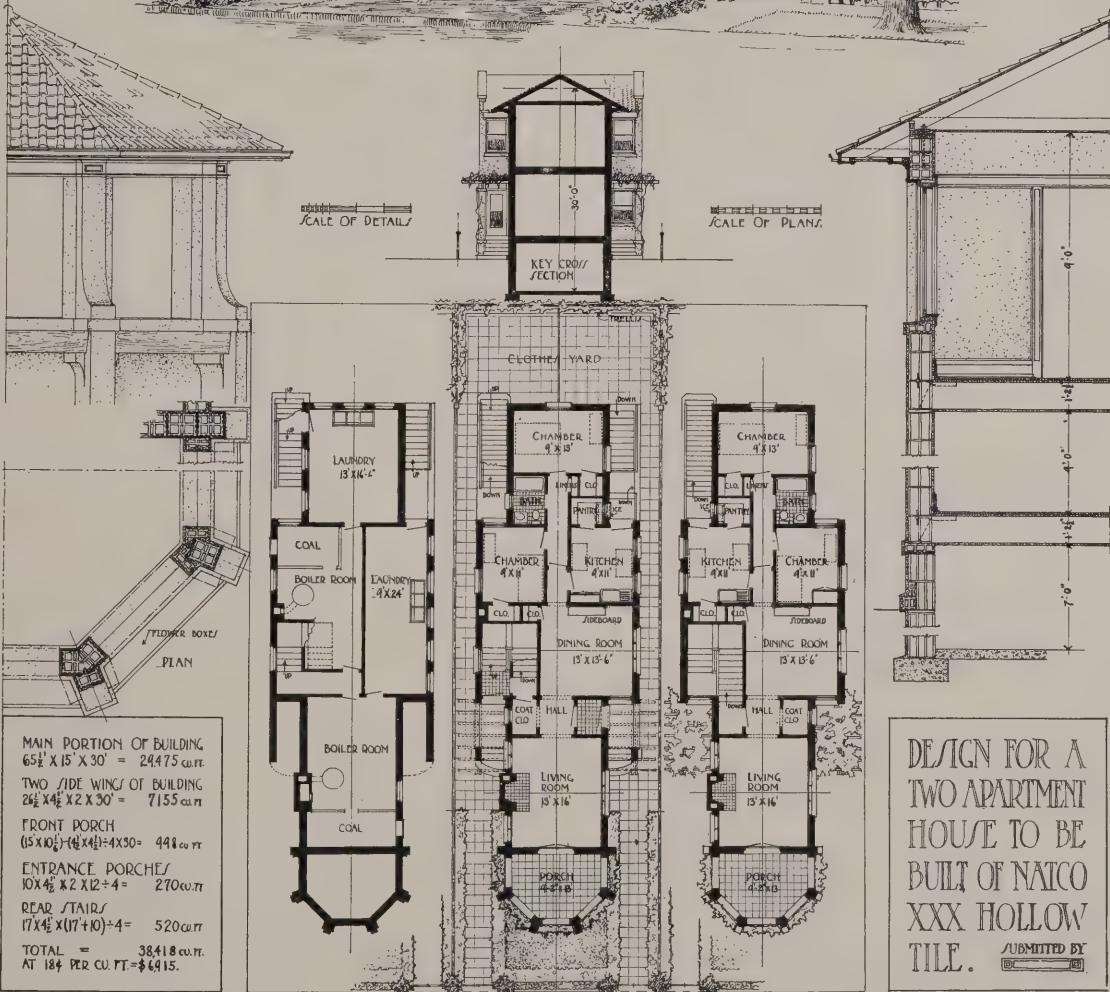
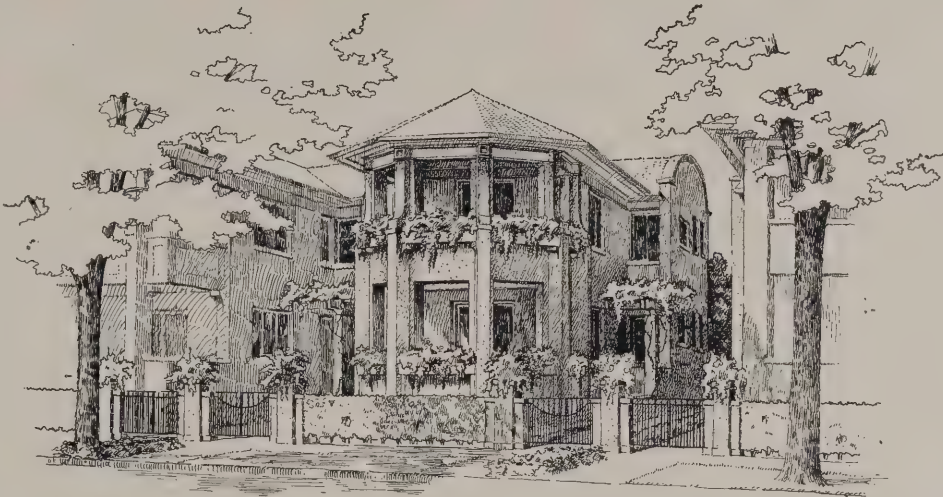
DESIGN FOR A TWO APARTMENT HOUSE TO BE BUILT OF NATCO XXX HOLLOW TILE

Submitted by R. F. WALKER

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# THE NATCO TWO-APARTMENT HOUSE

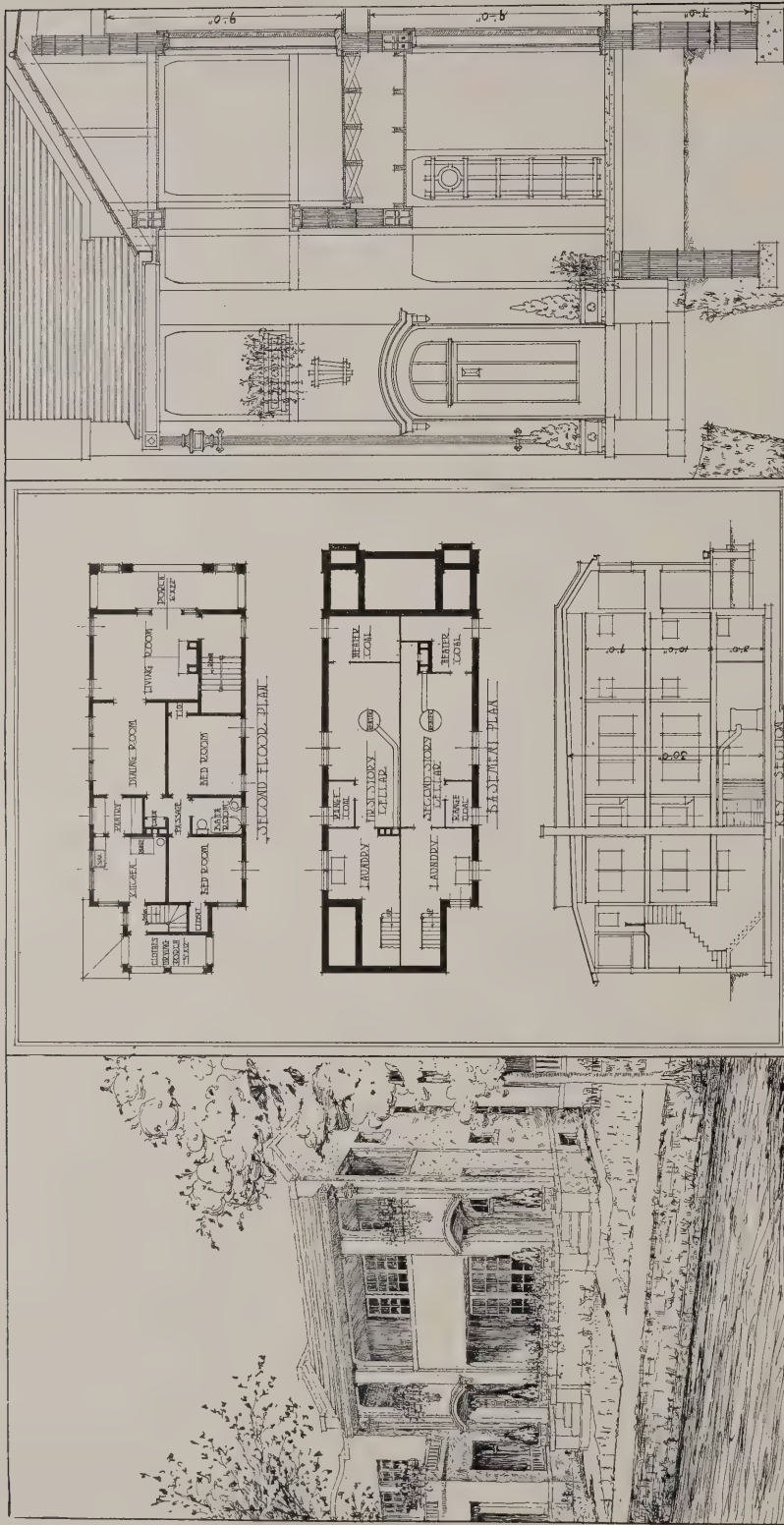


MENTION DESIGN

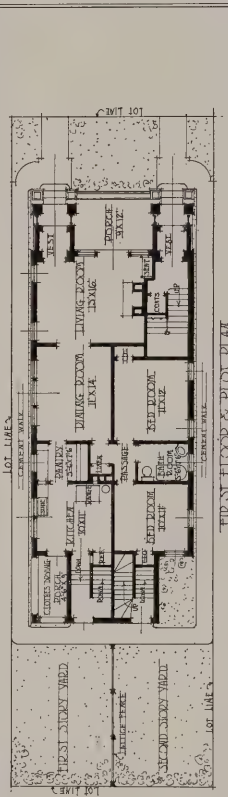
Submitted by EMIL F. HASENBALG  
 2111 Greenleaf Avenue, Chicago, Ill.



# THE NATCO TWO-APARTMENT HOUSE



DESIGN  
FOR A  
TWO APARTMENT HOUSE  
TO BE BUILT OF  
NATCO XXXX HOLLOW TILE  
PERMITTED BY  
SCALE FOR PLANS  
DETAILS



CUBAGE  
HOUSE PROPER 24X45 X 30'  
32,400 CU FT  
MAIN PORCH INCLUDING REFRIGERATOR  
4,320 CU FT  
PENT HOUSE 20 X 15 X 28 = 2,160 CU FT  
DECKING 12 X 9 CU FT 1000  
CLOTHES DRESSING PORCH = 3051 CU FT  
TOTAL 39,111 CU FT  
AT WATER CISTERN 115 IS 18 TOTAL COST

MENTION DESIGN  
Submitted by ARTHUR J. POHLE  
18 Dudley Heights, Albany, N. Y.



# THE NATCO TWO-APARTMENT HOUSE

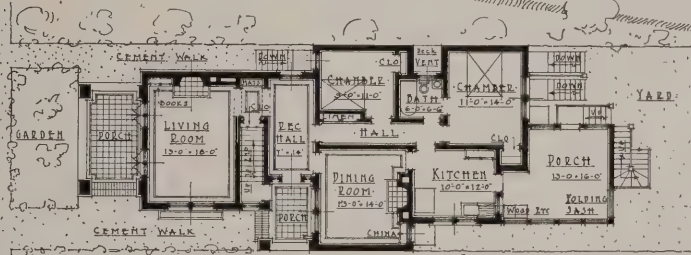
DESIGN FOR A  
TWO-APARTMENT HOUSE  
TO BE BUILT OF  
NATCO HOLLOW TILE



**- CURIC CONTENTS -**

HEIGHTS TAKEN FROM FIN FLOOR TO FIN FLOOR

BASEMENT	1013 3/4 ft x 8.5 = 8610.5 Cu Ft
UNEXCAVATED	360 3/4 ft x 2.5 = 900
FIRST FLOOR	1304 3/4 ft x 9.66 = 12596.64
FRONT PORCH	16 x 9 x 11 1/4 = 396
SECOND FLOOR	1319 3/4 ft x 9.1 = 12093.5
ROOF	1319 3/4 ft x 3 = 3987
TOTAL CUBAGE	30584.04 Cu Ft
COST AT 18¢ Cu Ft	\$5505.12



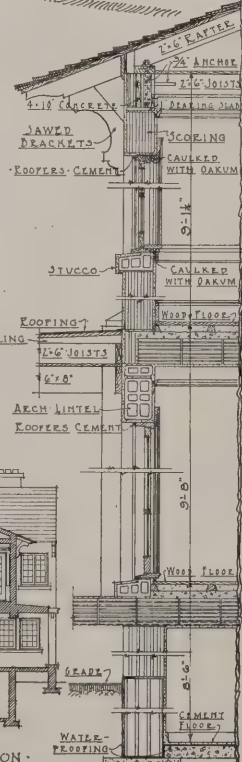
FIRST FLOOR PLAN



SECOND FLOOR PLAN



BASEMENT PLAN



SECTION THRU FRONT



TRANSVERSE SECTION

0 5 10 15 20 25 30  
SCALE OF PLANS

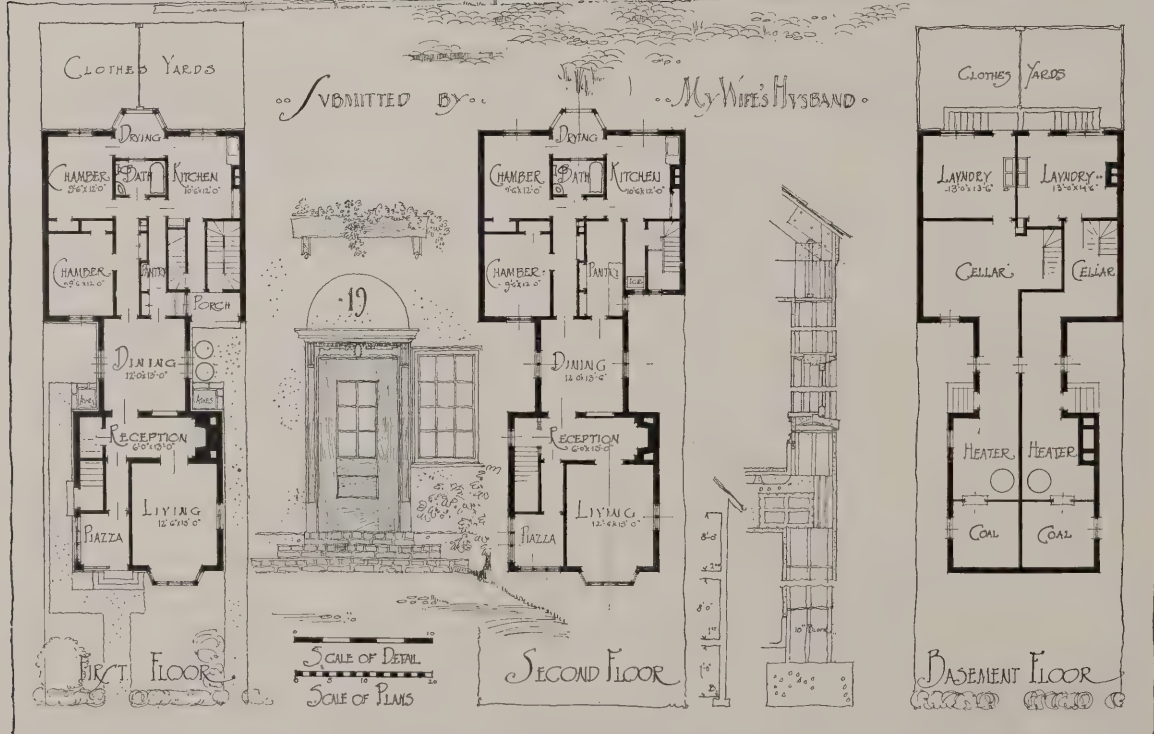


SUBMITTED BY

DESIGN submitted by WARREN A. HERMAN  
1104 Humboldt Bank Building, San Francisco, Cal.



# THE NATCO TWO-APARTMENT HOUSE



DESIGN FOR A TWO APARTMENT HOUSE TO BE BUILT OF NATCO XXX HOLLOW TILE

DESIGN submitted by RICHARD J. SHAW  
100 Boylston Street, Boston, Mass.



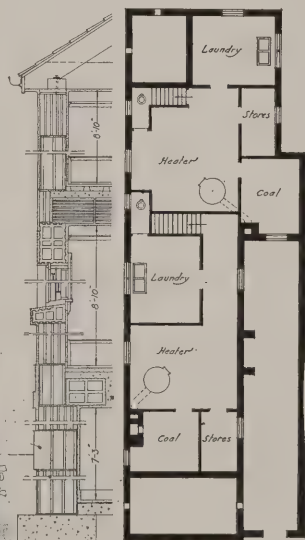
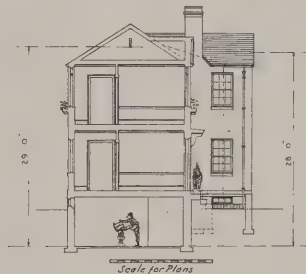
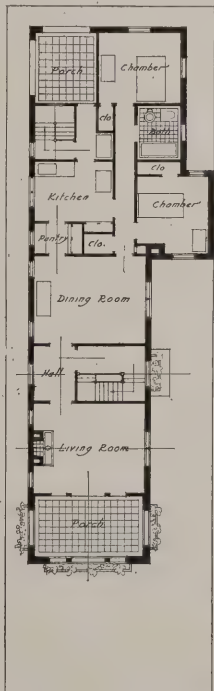
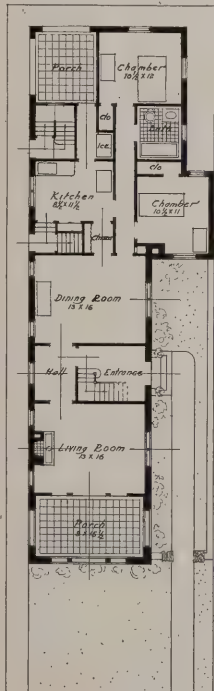
# THE NATCO TWO-APARTMENT HOUSE



## DESIGN FOR A TWO APARTMENT HOUSE TO BE BUILT OF NATCO XXX HOLLOW TILE

### CUBAGE

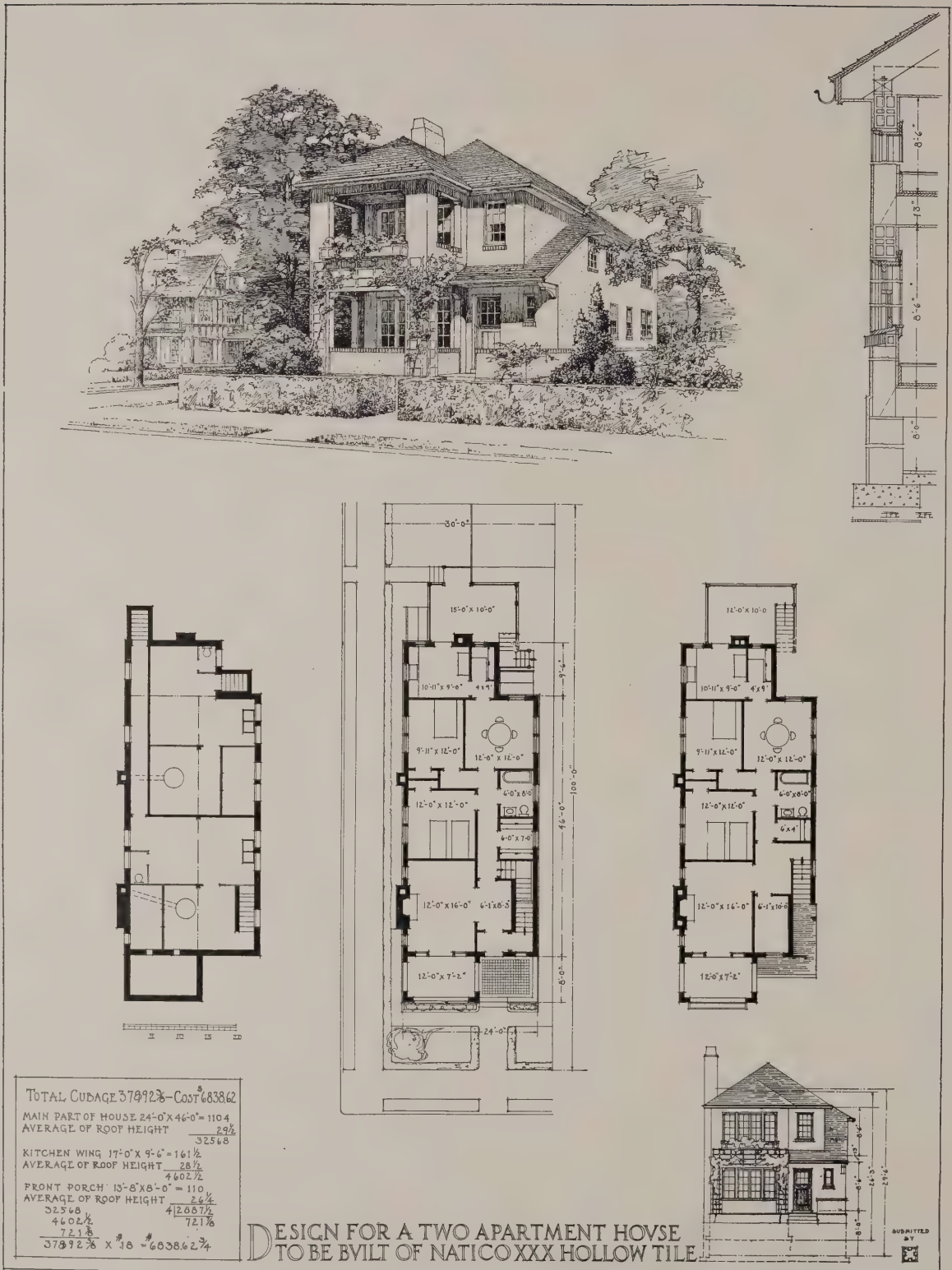
FRONT PORCH  $10 \times 18 \times 24 = 41080$   
 FRONT PORTION  $18 \times 34 \times 29 = 17748$   
 REAR CHAMBER  $11 \times 13 \times 29 = 4147$   
 MIDDLE PORTION  $22 \times 23 \times 29 = 14674$   
 PROJECTION AT  $4 \times 13 \times 28 = 1456$   
 FRONT CHAMBER, TOTAL = 39105



DESIGN submitted by WARNER A. EBBETS  
 6049A Catherine Street, Philadelphia, Pa.

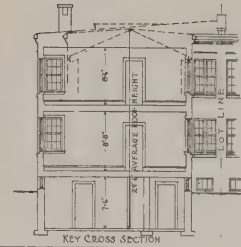


# THE NATCO TWO-APARTMENT HOUSE





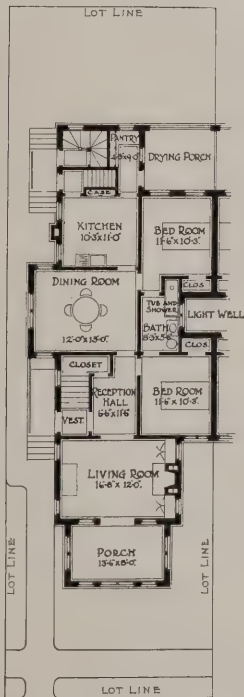
# THE NATCO TWO-APARTMENT HOUSE



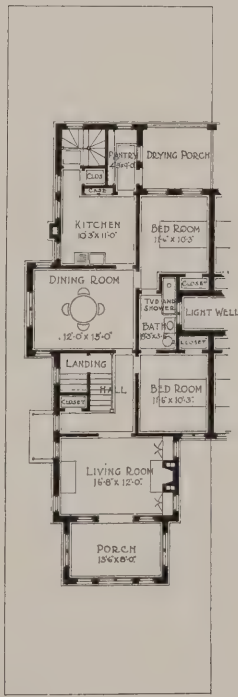
DESIGN FOR A TWO APARTMENT HOUSE  
TO BE BUILT OF NATCO XXX HOLLOW TILE



AREA • CUBAGE • COST  
 AREA OF HOUSE 1246 SQ. FT.  
 " " PORCH 137 " "  
 AVERAGE HOUSE HEIGHT 29'-0"  
 " " PORCH " 28'-0"  
 HOUSE CUBAGE 36757 CU. FT.  
 PORCH " 959 " "  
 TOTAL " 37716 " "  
 COST PER CUBIC FOOT .18  
 TOTAL COST \$ 6788.88.



FIRST FLOOR

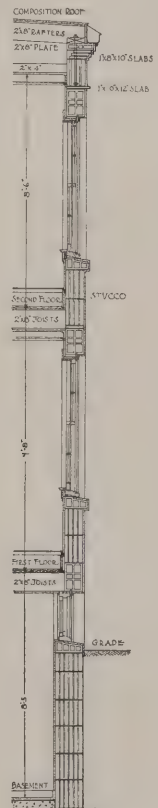


SECOND FLOOR

SCALE 0 5 10 15 20



BASEMENT

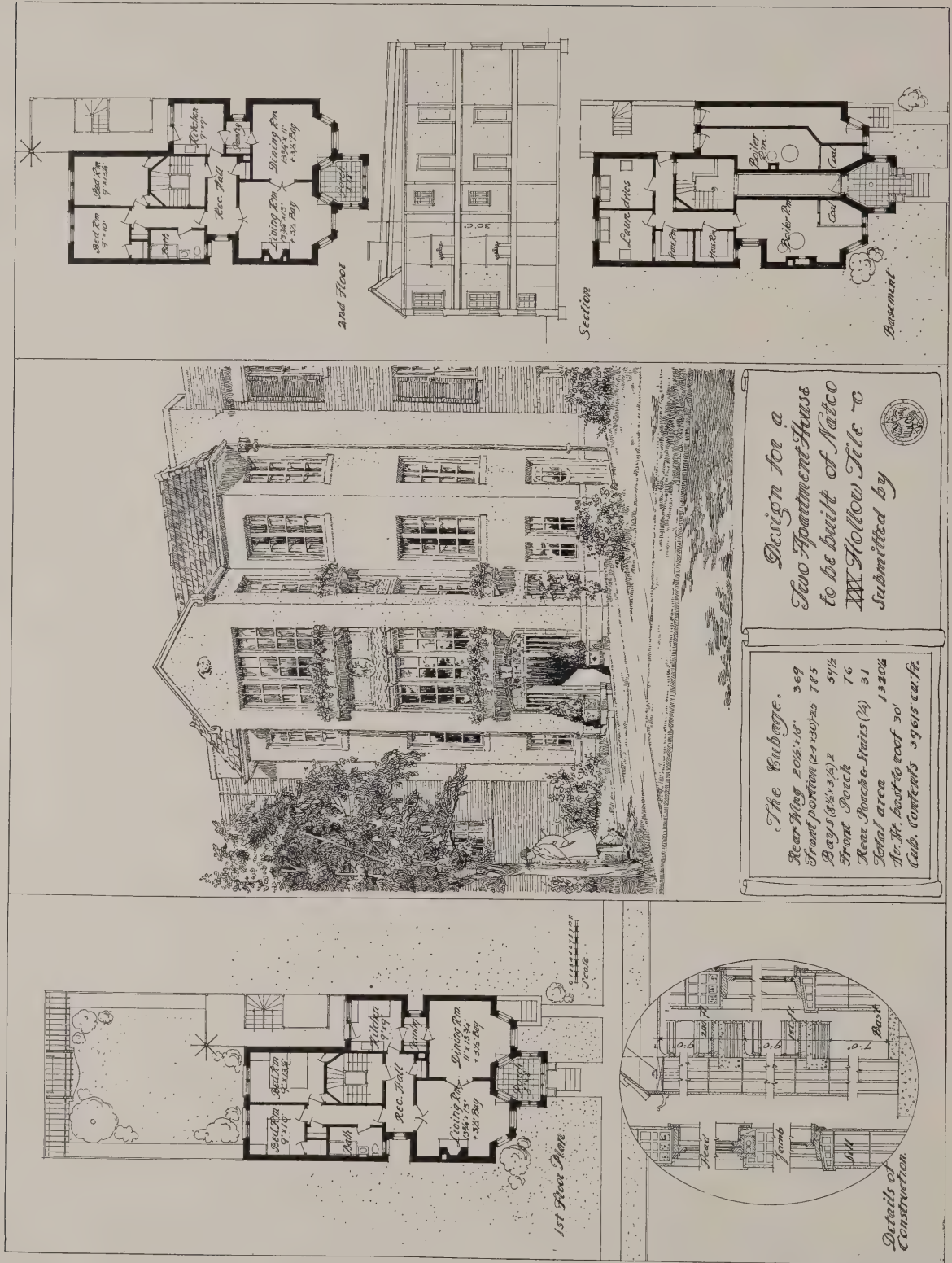


DETAIL SECTION  
SCALE 0 1 2 3 4

DESIGN submitted by CHARLES A. WINCHESTER  
8 Beacon Street, Boston, Mass.



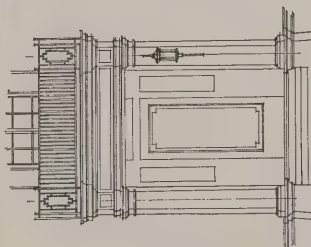
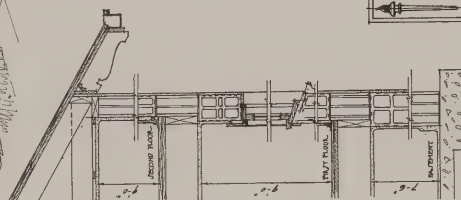
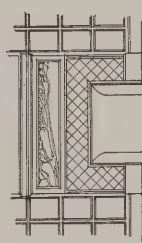
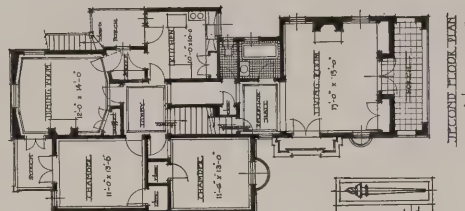
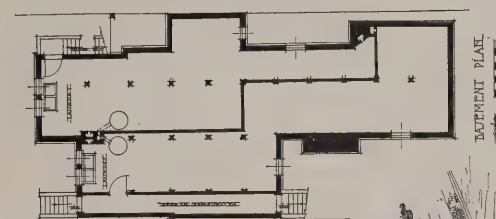
# THE NATCO TWO-APARTMENT HOUSE



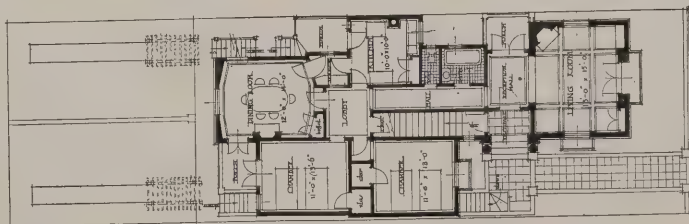
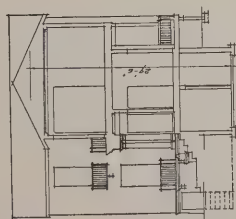
DESIGN submitted by B. C. GREENGARD  
6 North Clark Street, Chicago, Ill.



## THE NATCO TWO-APARTMENT HOUSE



DATE	7-2-52
TIME	10:00
NAME	WILLIAM J. COLE
ADDRESS	1000 1/2 E. 10th St. Wichita, Kan.
TELEPHONE	222-3
REMARKS	<p>13-11-10-11-12-13-14-15-16-17-18-19-20-21-22-23-24-25-26-27-28-29-30-31-32-33-34-35-36-37-38-39-40-41-42-43-44-45-46-47-48-49-50-51-52-53-54-55-56-57-58-59-60-61-62-63-64-65-66-67-68-69-70-71-72-73-74-75-76-77-78-79-80-81-82-83-84-85-86-87-88-89-90-91-92-93-94-95-96-97-98-99-100-101-102-103-104-105-106-107-108-109-110-111-112-113-114-115-116-117-118-119-120-121-122-123-124-125-126-127-128-129-130-131-132-133-134-135-136-137-138-139-140-141-142-143-144-145-146-147-148-149-150-151-152-153-154-155-156-157-158-159-160-161-162-163-164-165-166-167-168-169-170-171-172-173-174-175-176-177-178-179-180-181-182-183-184-185-186-187-188-189-190-191-192-193-194-195-196-197-198-199-200-201-202-203-204-205-206-207-208-209-210-211-212-213-214-215-216-217-218-219-220-221-222-223-224-225-226-227-228-229-230-231-232-233-234-235-236-237-238-239-240-241-242-243-244-245-246-247-248-249-250-251-252-253-254-255-256-257-258-259-260-261-262-263-264-265-266-267-268-269-270-271-272-273-274-275-276-277-278-279-280-281-282-283-284-285-286-287-288-289-290-291-292-293-294-295-296-297-298-299-300-301-302-303-304-305-306-307-308-309-310-311-312-313-314-315-316-317-318-319-320-321-322-323-324-325-326-327-328-329-330-331-332-333-334-335-336-337-338-339-340-341-342-343-344-345-346-347-348-349-350-351-352-353-354-355-356-357-358-359-360-361-362-363-364-365-366-367-368-369-370-371-372-373-374-375-376-377-378-379-380-381-382-383-384-385-386-387-388-389-390-391-392-393-394-395-396-397-398-399-400-401-402-403-404-405-406-407-408-409-410-411-412-413-414-415-416-417-418-419-420-421-422-423-424-425-426-427-428-429-430-431-432-433-434-435-436-437-438-439-440-441-442-443-444-445-446-447-448-449-450-451-452-453-454-455-456-457-458-459-460-461-462-463-464-465-466-467-468-469-470-471-472-473-474-475-476-477-478-479-480-481-482-483-484-485-486-487-488-489-490-491-492-493-494-495-496-497-498-499-500-501-502-503-504-505-506-507-508-509-510-511-512-513-514-515-516-517-518-519-520-521-522-523-524-525-526-527-528-529-530-531-532-533-534-535-536-537-538-539-540-541-542-543-544-545-546-547-548-549-550-551-552-553-554-555-556-557-558-559-560-561-562-563-564-565-566-567-568-569-570-571-572-573-574-575-576-577-578-579-580-581-582-583-584-585-586-587-588-589-590-591-592-593-594-595-596-597-598-599-600-601-602-603-604-605-606-607-608-609-610-611-612-613-614-615-616-617-618-619-620-621-622-623-624-625-626-627-628-629-630-631-632-633-634-635-636-637-638-639-640-641-642-643-644-645-646-647-648-649-650-651-652-653-654-655-656-657-658-659-660-661-662-663-664-665-666-667-668-669-670-671-672-673-674-675-676-677-678-679-680-681-682-683-684-685-686-687-688-689-690-691-692-693-694-695-696-697-698-699-700-701-702-703-704-705-706-707-708-709-710-711-712-713-714-715-716-717-718-719-720-721-722-723-724-725-726-727-728-729-730-731-732-733-734-735-736-737-738-739-740-741-742-743-744-745-746-747-748-749-750-751-752-753-754-755-756-757-758-759-760-761-762-763-764-765-766-767-768-769-770-771-772-773-774-775-776-777-778-779-780-781-782-783-784-785-786-787-788-789-790-791-792-793-794-795-796-797-798-799-800-801-802-803-804-805-806-807-808-809-810-811-812-813-814-815-816-817-818-819-820-821-822-823-824-825-826-827-828-829-830-831-832-833-834-835-836-837-838-839-840-841-842-843-844-845-846-847-848-849-850-851-852-853-854-855-856-857-858-859-860-861-862-863-864-865-866-867-868-869-870-871-872-873-874-875-876-877-878-879-880-881-882-883-884-885-886-887-888-889-890-891-892-893-894-895-896-897-898-899-900-901-902-903-904-905-906-907-908-909-910-911-912-913-914-915-916-917-918-919-920-921-922-923-924-925-926-927-928-929-930-931-932-933-934-935-936-937-938-939-940-941-942-943-944-945-946-947-948-949-950-951-952-953-954-955-956-957-958-959-960-961-962-963-964-965-966-967-968-969-970-971-972-973-974-975-976-977-978-979-980-981-982-983-984-985-986-987-988-989-990-991-992-993-994-995-996-997-998-999-1000-1001-1002-1003-1004-1005-1006-1007-1008-1009</p>



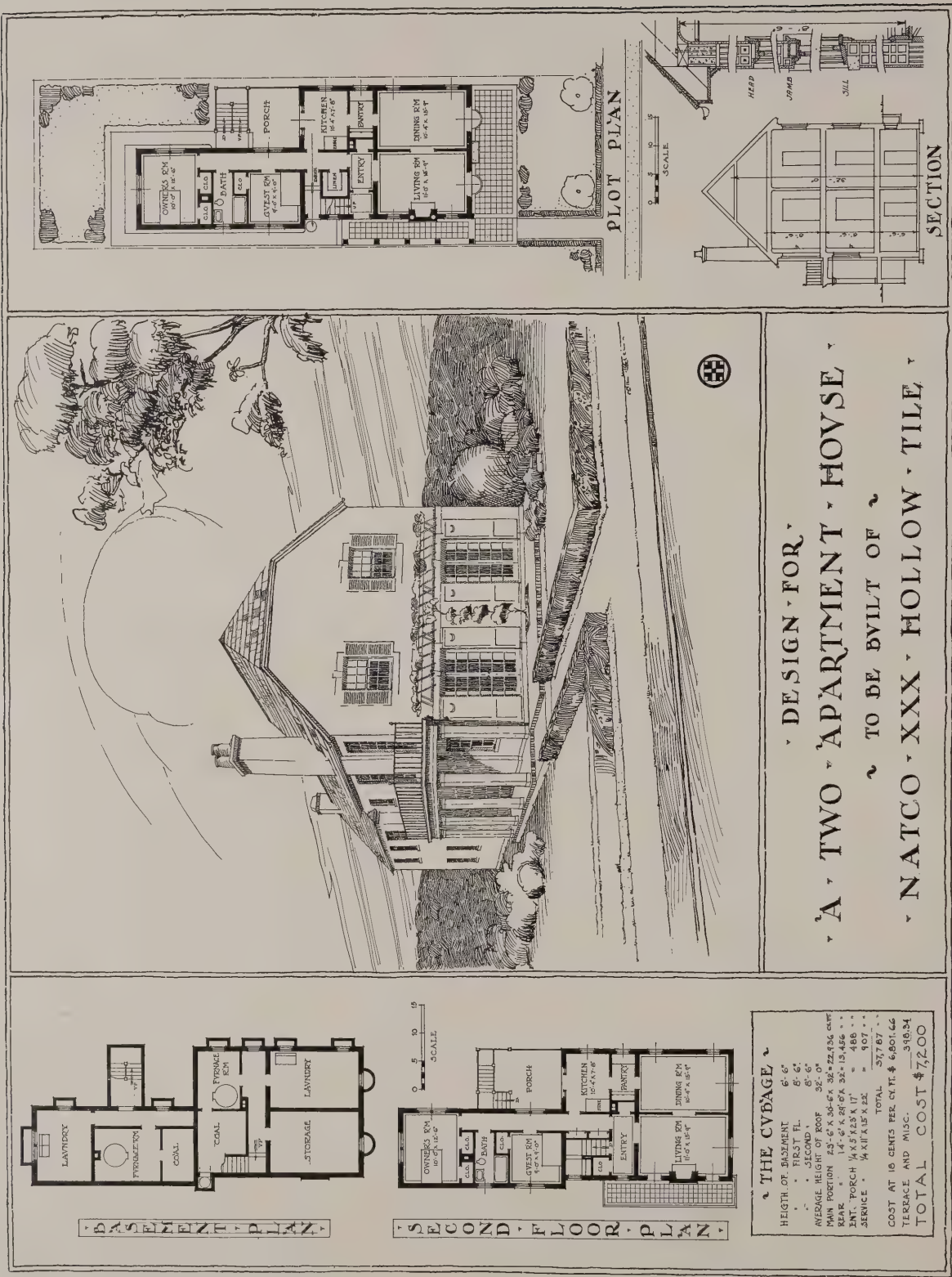
FIRST FLOOR PLAN

JUNE 27. 1914. SUBSTITUTE  
 —DESIGN FOR A—  
 —TWO APARTMENT HOUSE—  
 TO BE BUILT OF NACOG DOG HOLLOW TILE

DESIGN submitted by **RAYMOND DE SANNO**  
1710 Russell Street, Berkeley, Cal.



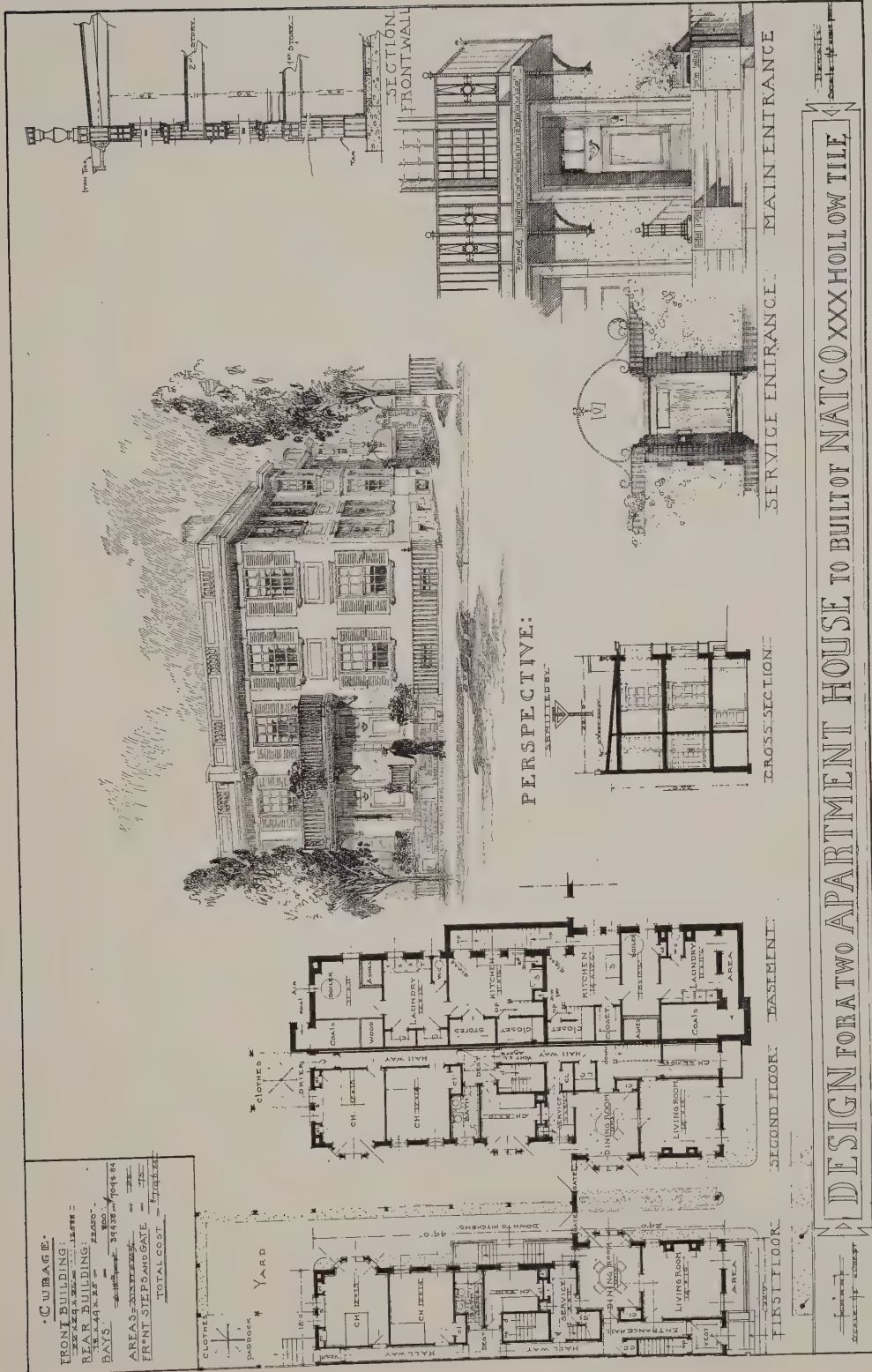
THE NATCO TWO-APARTMENT HOUSE



DESIGN submitted by J. PHILIP McDONNELL  
160 Merrick Avenue, Detroit, Mich.



# THE NATCO TWO-APARTMENT HOUSE



DESIGN submitted by LINDLEY JOHNSON  
 Harrison Building, Philadelphia, Pa.

## A detailed black and white architectural sketch of a two-story house. The house features a gabled roof with two chimneys. A balcony with a decorative railing is located on the second floor. The ground floor has a covered porch with columns. The house is surrounded by landscaping, including a large tree on the left and various shrubs and bushes. The drawing is done in a sketchy, artistic style with cross-hatching for shading.



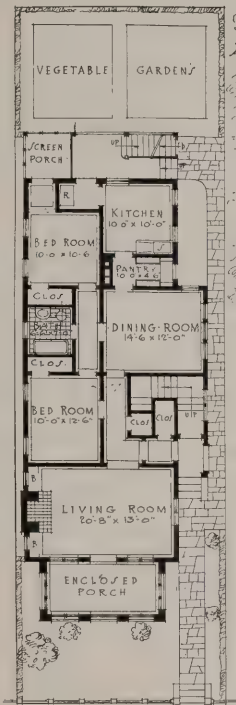
· DESIGN · FOR · A · TWO · APARTMENT · HOUSE · TO · BE · BUILT ·  
· OF · NATCO · XXX · HOLLOW · TILE ·



24



# THE NATCO TWO-APARTMENT HOUSE



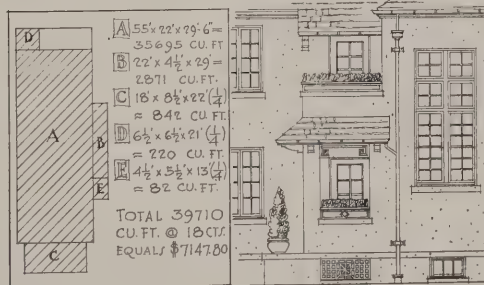
FIRST FLOOR PLAN



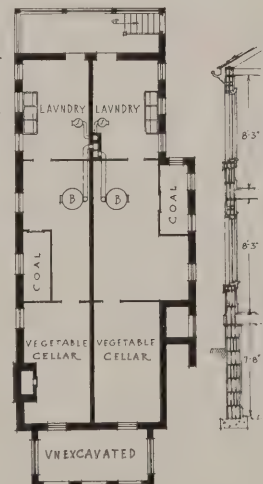
DESIGN FOR A TWO-APARTMENT HOUSE  
TO BE BUILT OF NATCO XXX HOLLOW TILE



SECOND FLOOR PLAN



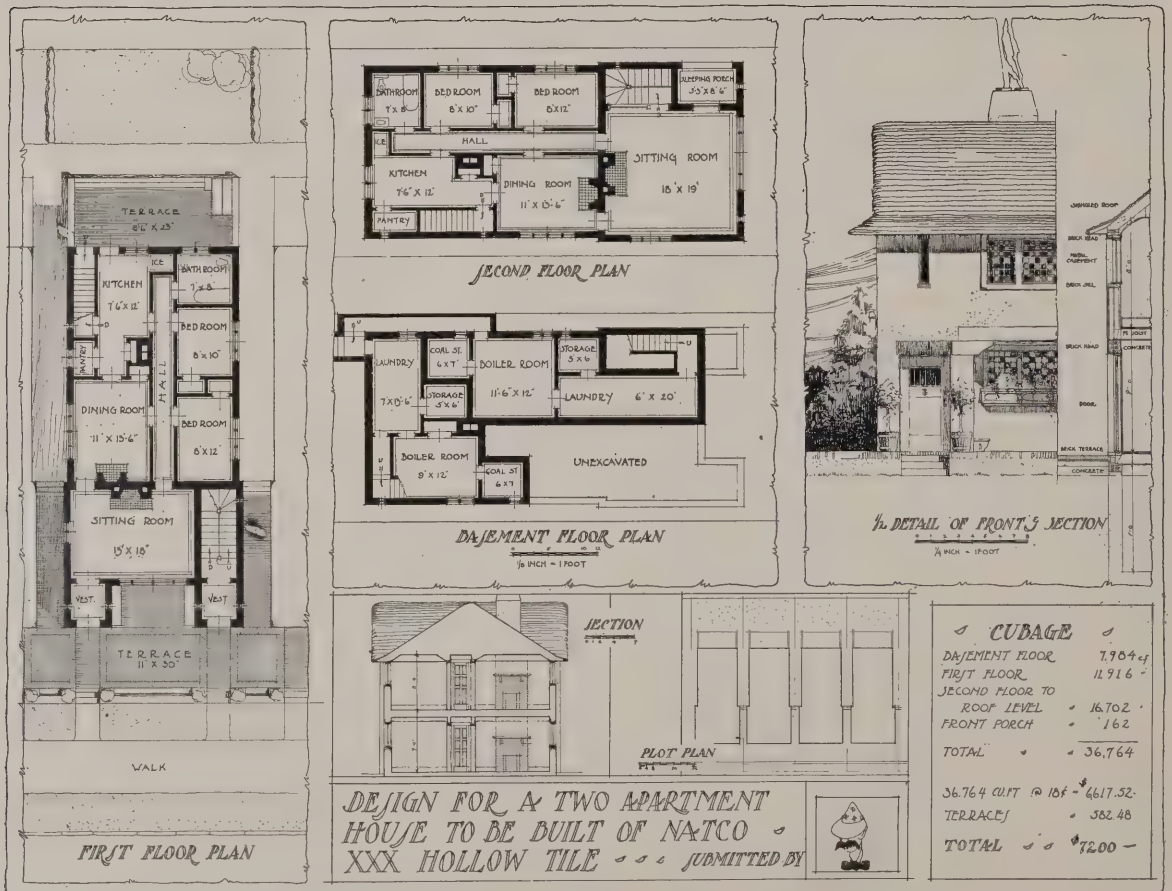
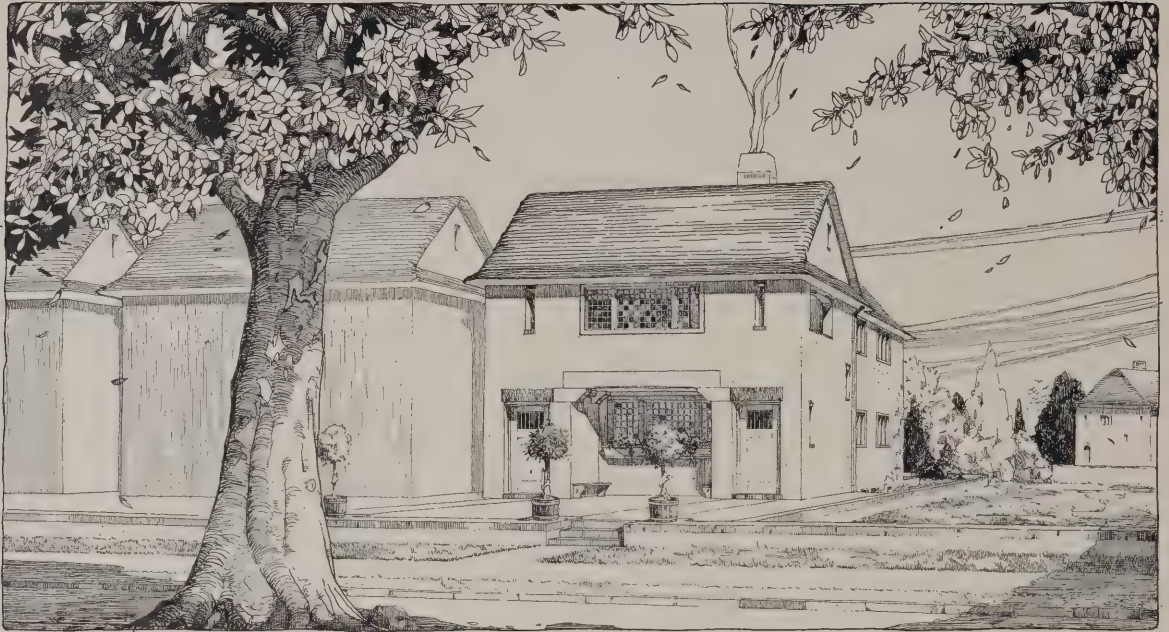
PLANS & ELEVATION  
DETAIL & WALL SECTION



BASEMENT FLOOR PLAN

DESIGN submitted by DANIEL SHEA  
33 Lyman Street, Springfield, Mass.

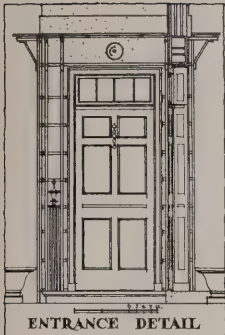
# THE NATCO TWO-APARTMENT HOUSE



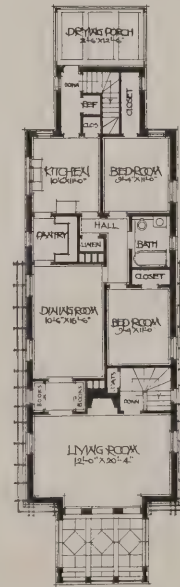
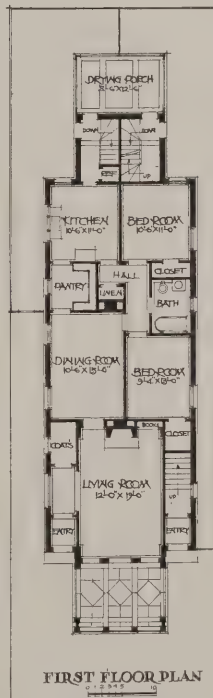
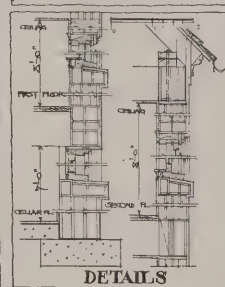
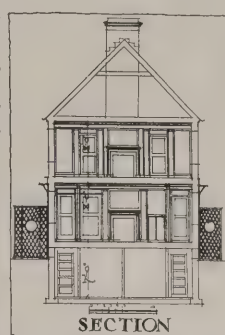
DESIGN submitted by ELLIOTT L. CHISLING  
2127 Caton Avenue, Brooklyn, N. Y.



# THE NATCO TWO-APARTMENT HOUSE



**DATA**  
**DIMENSIONS**  
 MAIN BUILDING 22'-0" X 54'-0"  
 REAR STAIR EXTENSION 9'-6" X 14'-0"  
 PRIVATE PORCHES 12'-0" X 18'-6"  
 AVERAGE HEIGHT MAIN BUILDING ROOF 30'-0"  
 HEIGHT OF STAIR EXTENSION ROOF 25'-0"  
 HEIGHT OF PORCH ROOF 21'-0"  
**CUBAGE**  
 MAIN BUILDING 856.40  
 REAR STAIR EXTENSION 22.5  
 PRIVATE PORCH 8.50  
 TOTAL CUBAGE 887.40

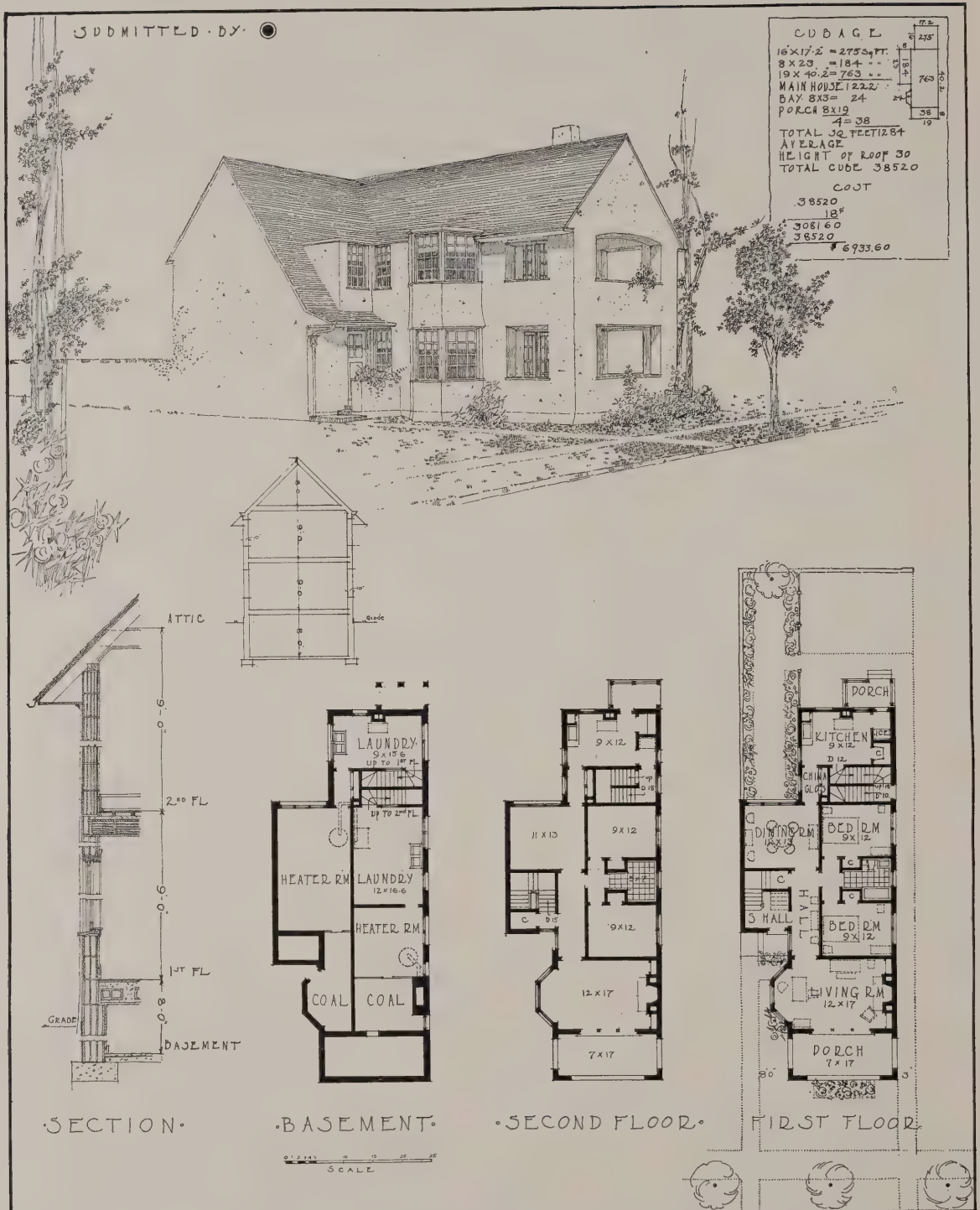


DESIGN FOR A TWO APARTMENT HOUSE  
 TO BE BUILT OF NATCO XXX HOLLOW TILE



DESIGN submitted by HUDSON & KLINE  
 245 West 55th Street, New York, N. Y.

# THE NATCO TWO-APARTMENT HOUSE

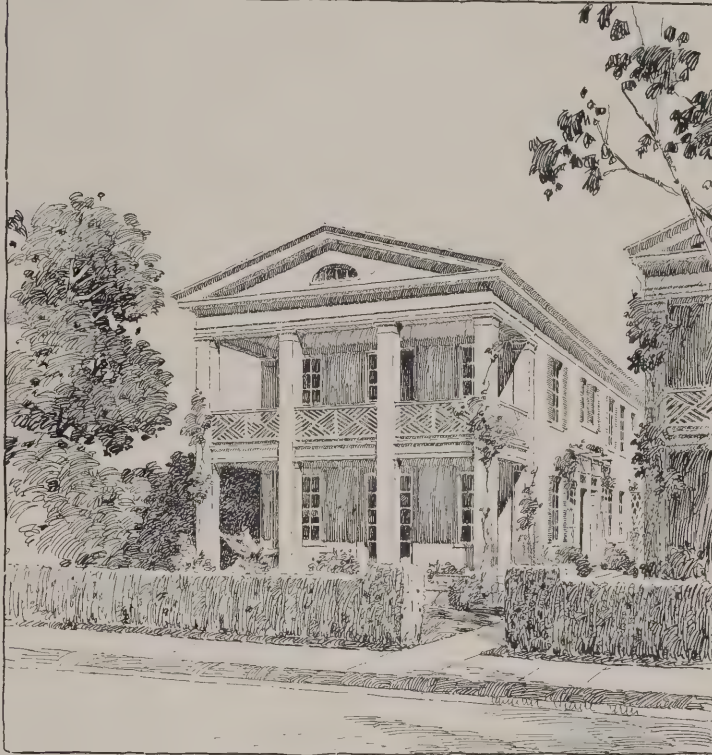


DESIGN FOR A TWO APARTMENT HOUSE.  
TO BE BUILT OF NATCO XXX HOLLOW TILE.

DESIGN submitted by HAROLD O. WARNER  
1954 East 73rd Street, Cleveland, Ohio



# THE NATCO TWO-APARTMENT HOUSE



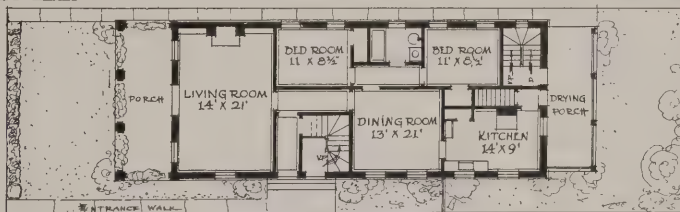
DESIGN FOR A TWO APARTMENT HOUSE -  
TO BE BUILT OF NATCO XXX HOLLOW TILE

## CUBAGE

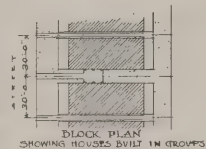
LENGTH OF HOUSE  
INCLUDING 1/4 OF  
PORCHES 57'-0"  
WIDTH OF HOUSE 23'-0"  
HEIGHT OF HOUSE 30'-0"  
CONTENTS - 39330 C<sup>3</sup> F<sup>3</sup>  
COST - AT 18 CENTS PER  
CUBIC FOOT - \$ 7079.40



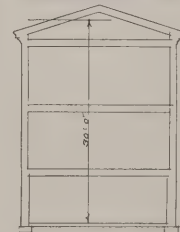
SECOND FLOOR PLAN



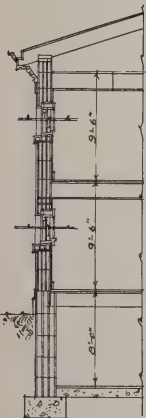
FIRST FLOOR PLAN



BLOCK PLAN  
SHOWING HOUSES BUILT IN GROUPS



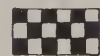
BASEMENT PLAN



SCALE  
OF FLOOR PLANS  
0 5 10 15

SUBMITTED  
BY

COMPETITION FOR A TWO APARTMENT HOUSE  
ON A LOT HAVING A FRONTAGE OF 30 FEET AND DEPTH OF 100 FEET  
TO BE BUILT OF NATCO XXX HOLLOW TILE

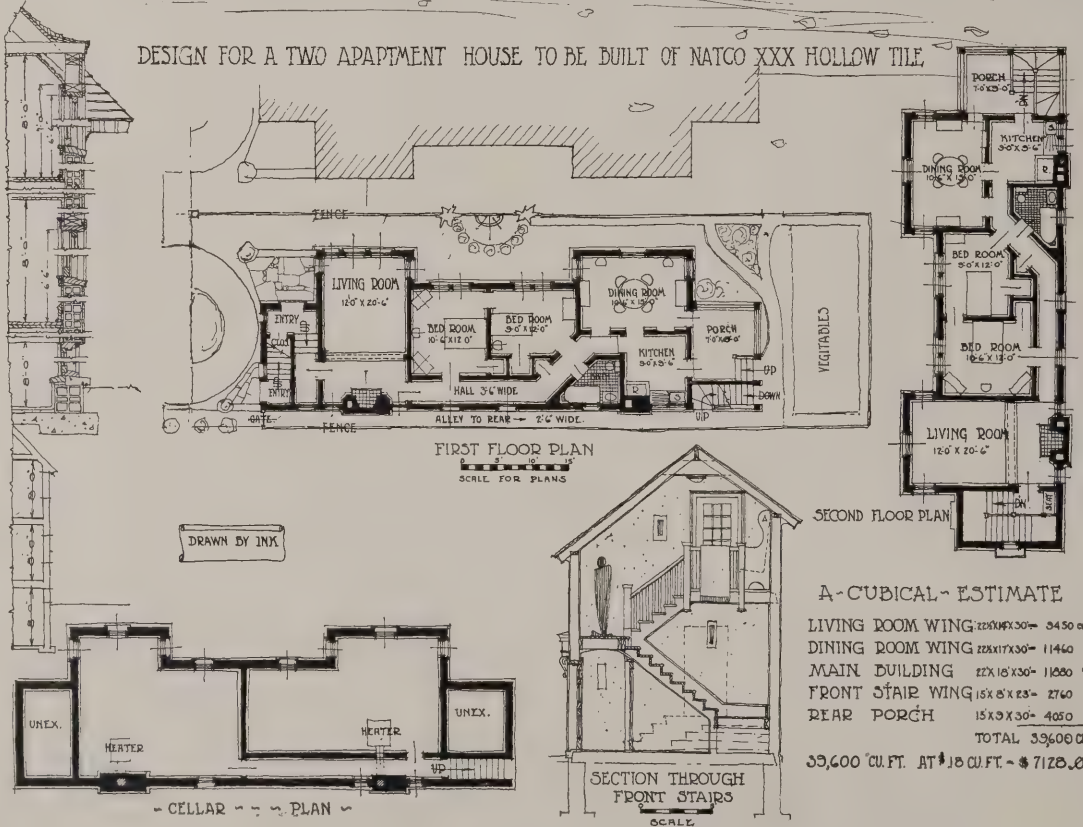


DESIGN submitted by SHELL LEWIS  
11 East 24th Street, New York, N. Y.

# THE NATCO TWO-APARTMENT HOUSE



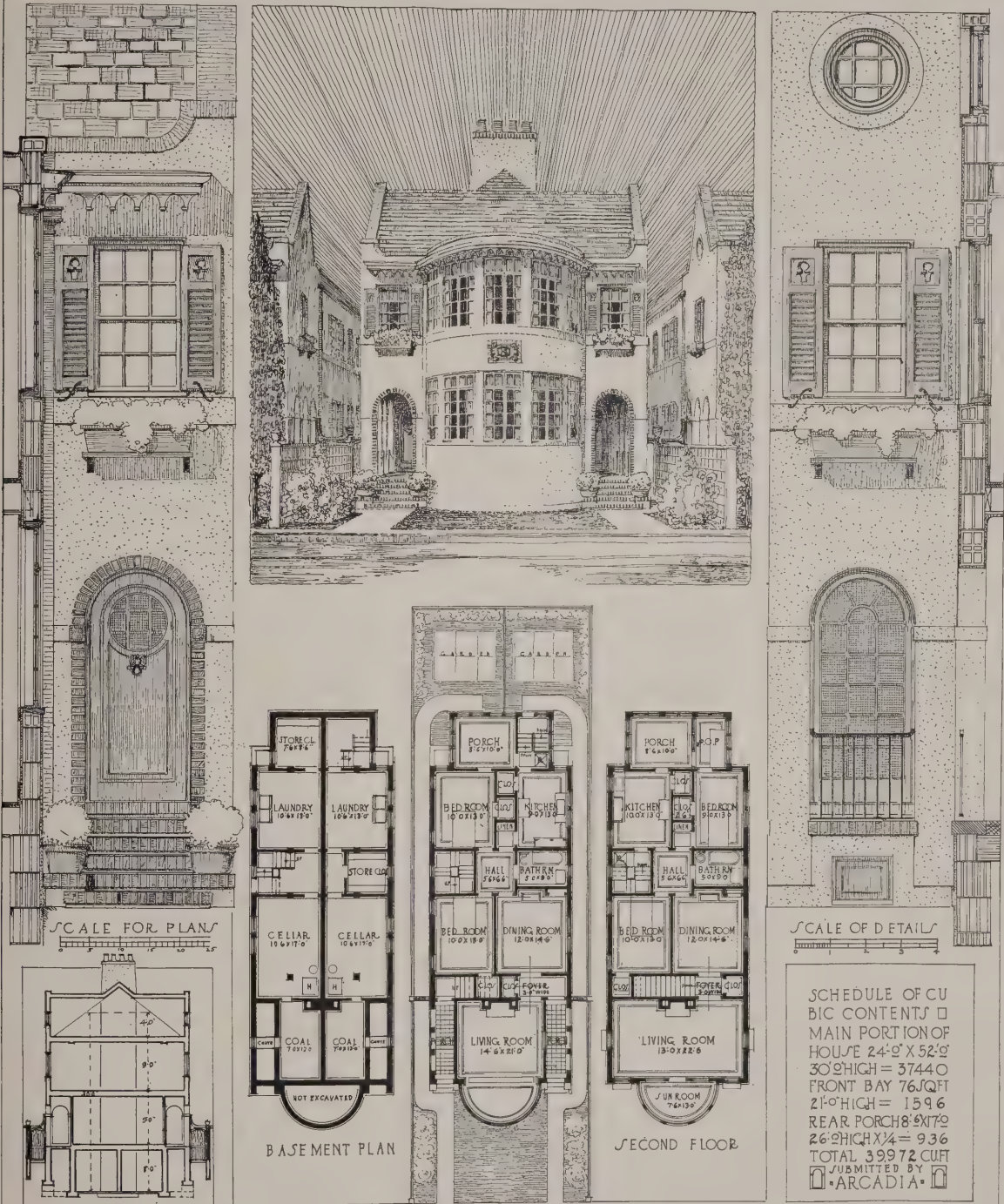
DESIGN FOR A TWO APARTMENT HOUSE TO BE BUILT OF NATCO XXX HOLLOW TILE



DESIGN submitted by EDWIN J. SCHMITT  
755 East 163rd Street, New York, N. Y.



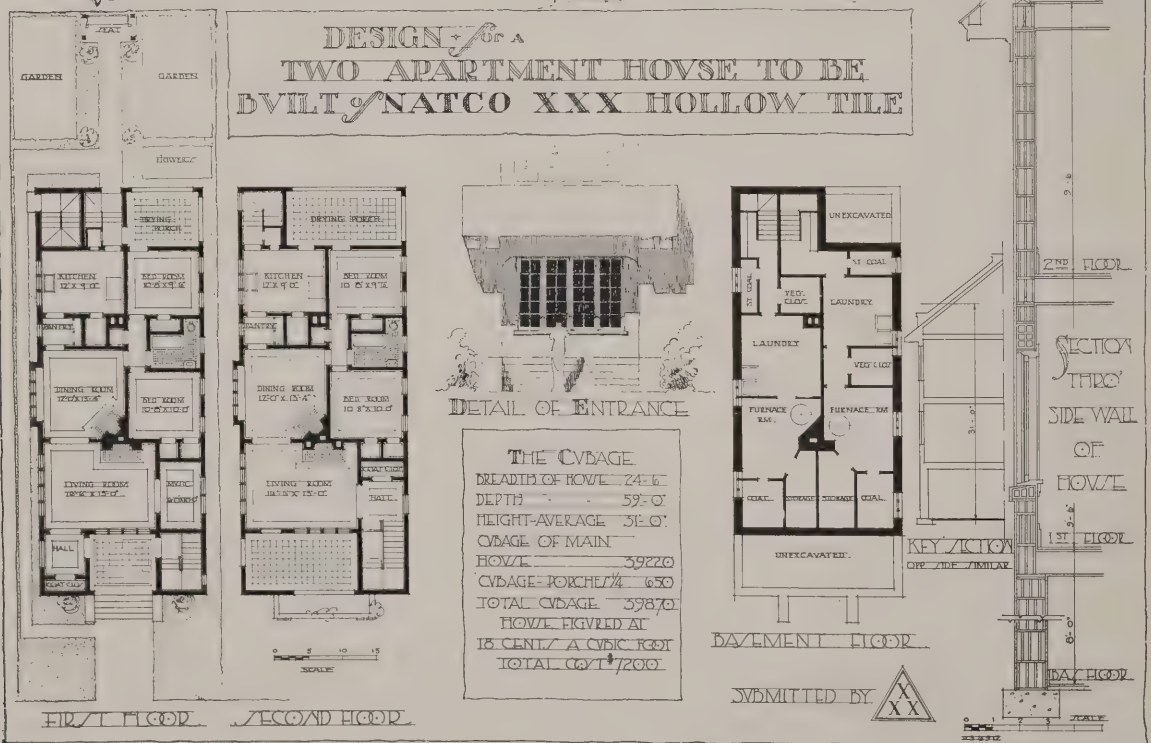
# THE NATCO TWO-APARTMENT HOUSE



DESIGN FOR A TWO-APARTMENT HOUSE TO BE BUILT OF NATCO XXX HOLLOW TILE

DESIGN submitted by DAVIS, McGRATH & KIESSLING  
175 Fifth Avenue, New York, N. Y.

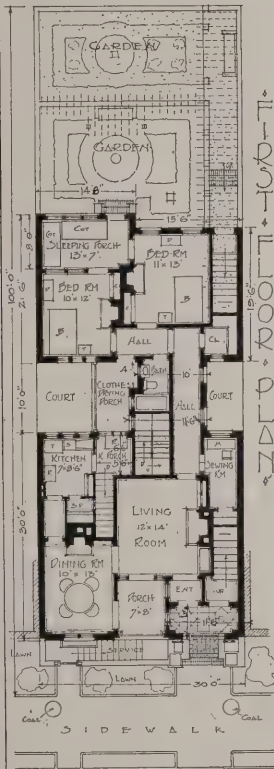
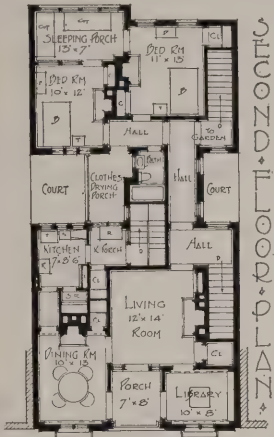
# THE NATCO TWO-APARTMENT HOUSE



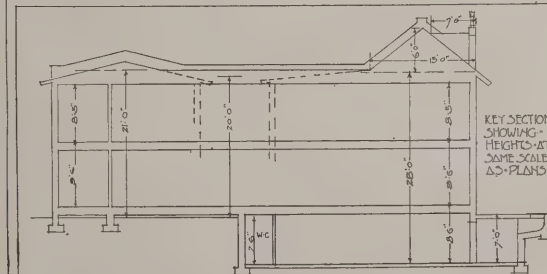
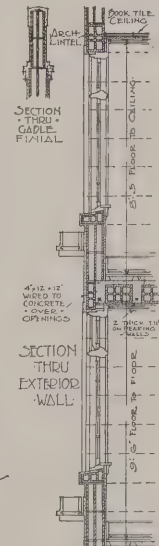
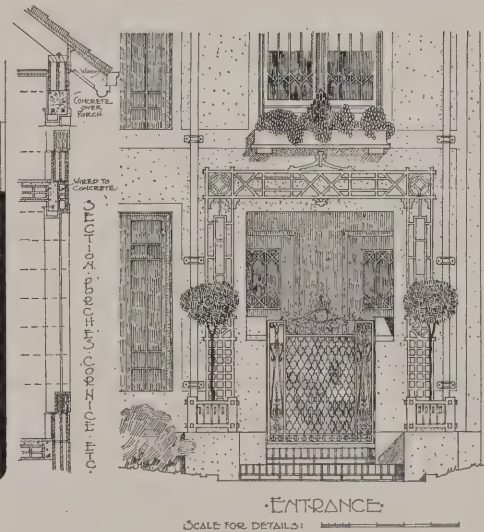
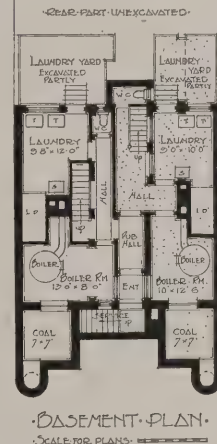
DESIGN submitted by FRED D. GARDNER  
1234 Pacific Street, Brooklyn, N. Y.



# THE NATCO TWO-APARTMENT HOUSE



NOTE: PARTS SHOWN SPECKLED 1ST FLOOR AND BASEMENT PLANS BELONG TO 2ND FLOOR APARTMENT.



SUBMITTED BY COLUMBIA

CUBICAL CONTENTS	
DEBIT	CREDIT
FRONT PART: 25' x 20' x 25' 12500	3/4 CUBICAL CONTENTS OF PORCHES: 490
10' x 10' x 25' 2500	ENT. PORCH 5' x 10' x 15' 1000
FRONT GABLES: 10' x 10' x 25' 2500	PORCH 7' x 10' x 15' 1000
COAL (5' x 8' x 7) 2 1000	KITCHEN PORCHES: 644
REAR PART: 25' x 14' x 21' 6347	SLEEPING PORCH: 2098
10' x 10' x 21' 2100	TOTAL: 4720
CENTRAL PART: 10' x 4' x 22' 5' 880	3/4 OF 4720 = 3172
11' x 6' x 20' 5' 1415	
WC 7' x 3' x 7' 5' 164	DEBIT 43082 CWT
TOTAL: 43082	CREDIT 3172
39910 CU FT AT 15¢	BAL 30010
	\$7123.80 ESTD COST

DESIGN FOR  
A  
TWO-APARTMENT HOUSE  
TO BE BUILT OF:  
NATCO  
XXX  
HOLLOW TILE

DESIGN submitted by EDWIN B. CHAPLIN, JR.  
344 Hill Street, Atlanta, Ga.

# THE NATCO TWO-APARTMENT HOUSE

## PERSPECTIVE VIEW.

DESIGN FOR A TWO-  
APARTMENT HOUSE  
TO BE BUILT OF NATCO  
XXX HOLLOW TILE

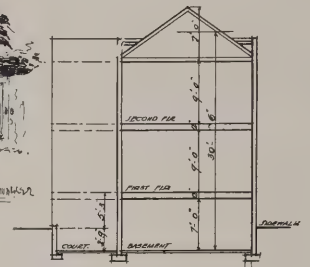


## CALCULATION OF CUBAGE.

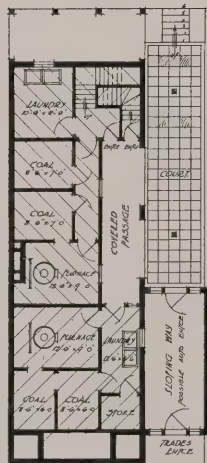
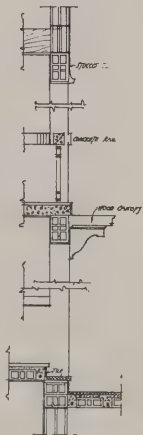
BASE:  $23'0" \times 20'0" = 460'0"$  CUB. FT.  
 $23'0" \times 10'0" = 230'0"$   
 1ST FL:  $12'0" \times 4'6" = 55'0"$   
 $30'0" \times 12'0" = 360'0"$   
 $30'0" \times 20'0" = 600'0"$   
 2ND FLOOR:  $26'4" \times 4'6" \times 30'0" = 380'0"$   
 2ND BALCONY:  $10'6" \times 4'6" \times 19'0" = 380'0"$   
 TOTAL: 39500  
 @ 18¢ CUB. FT. = \$7110.00



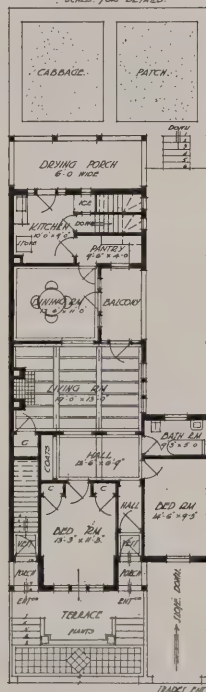
DETAIL OF PORCH



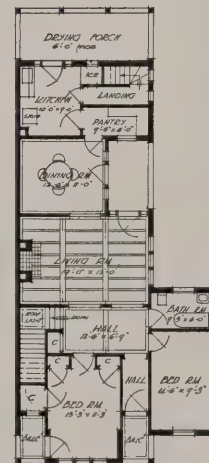
BLOCK SECTION



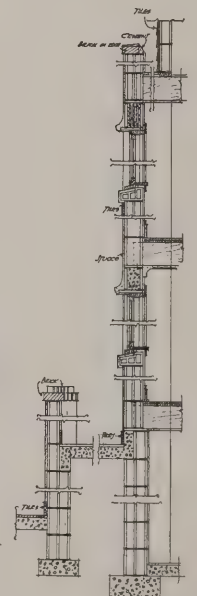
BASEMENT PLAN.



FIRST FLOOR PLAN.



SECOND FLOOR PLAN



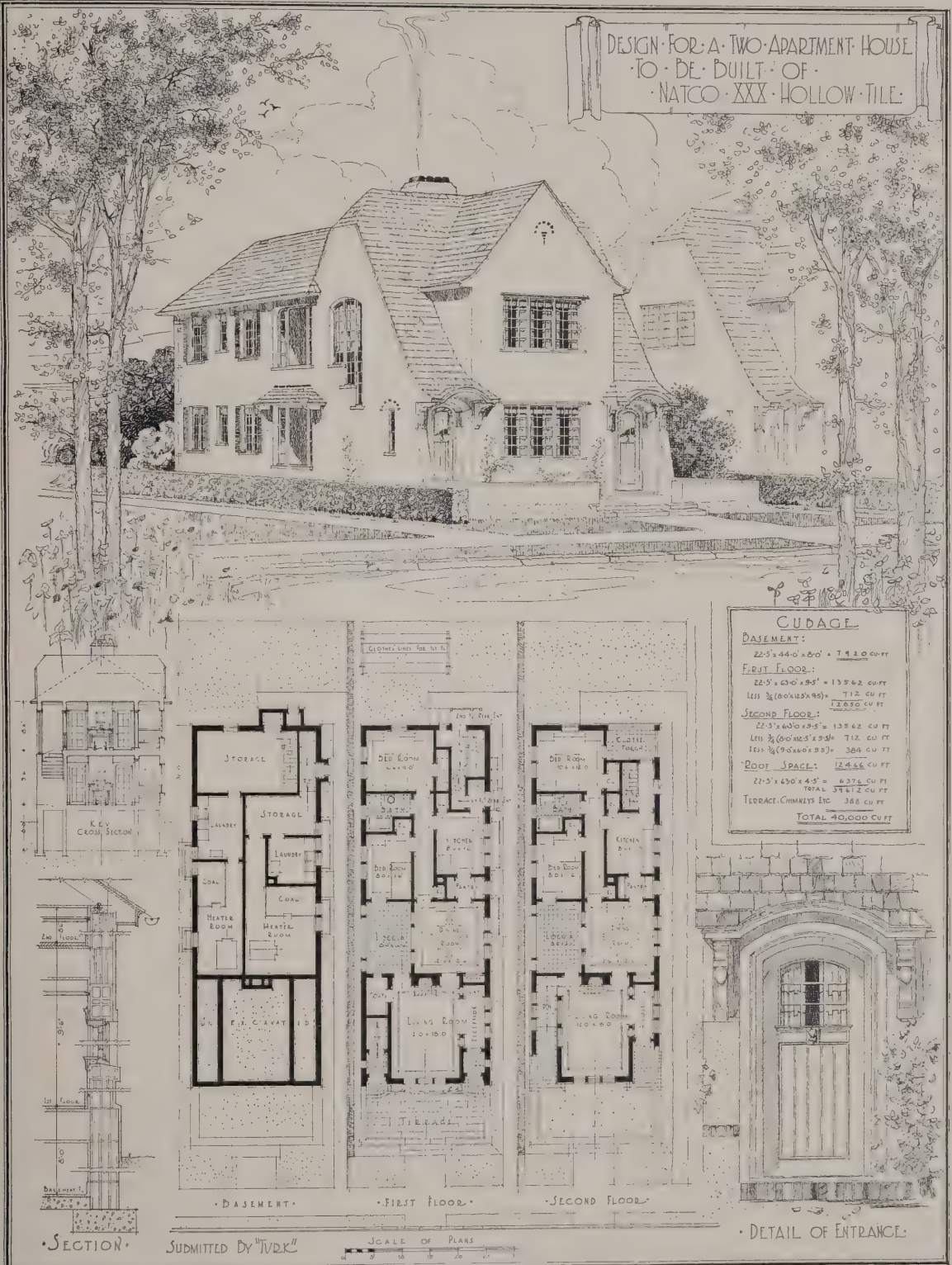
SUBMITTED BY:

DESIGN submitted by GEORGE M. STEWART  
 232 Mance Street, Montreal, Canada



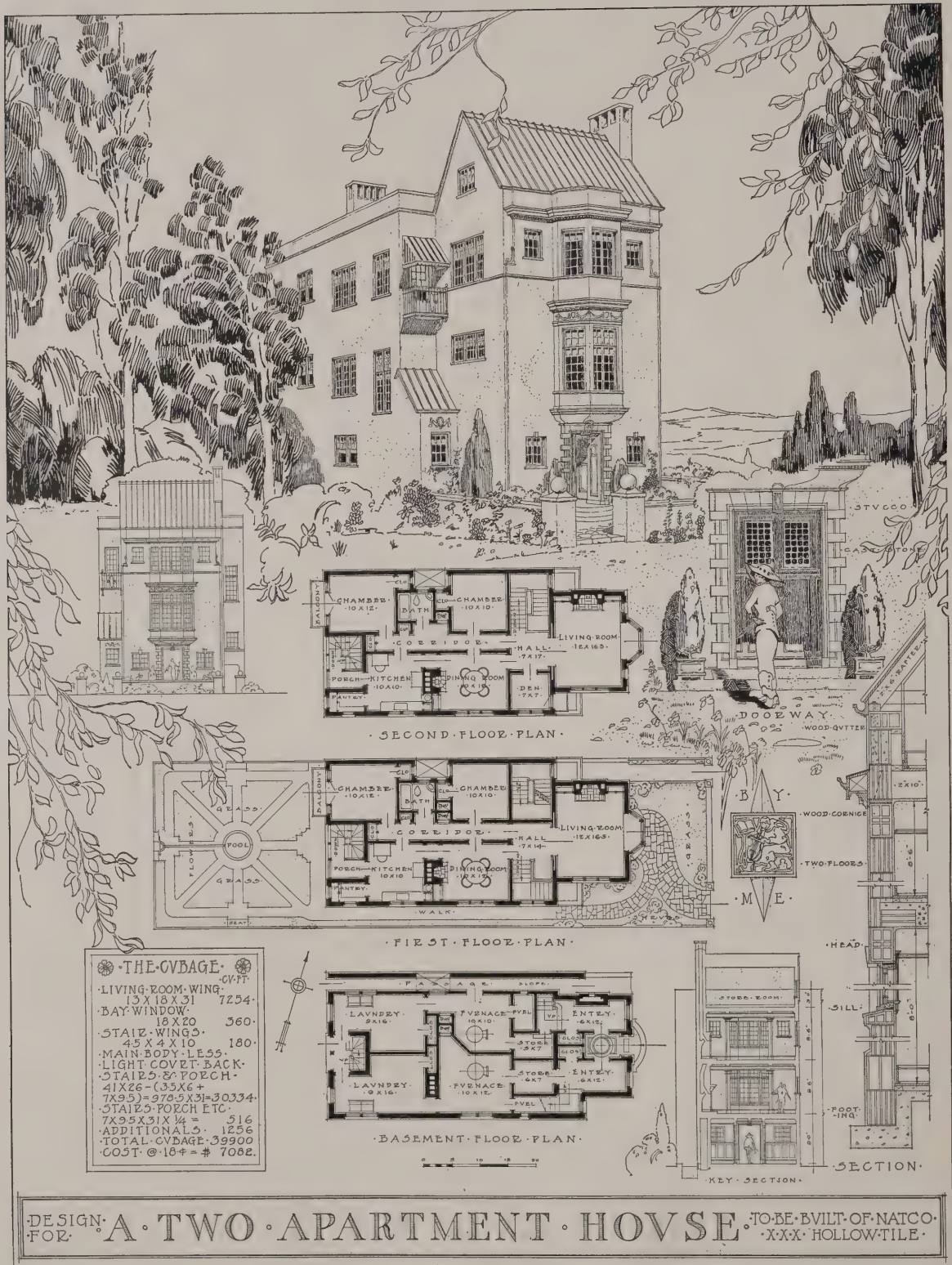
# THE NATCO TWO-APARTMENT HOUSE

DESIGN FOR A TWO-APARTMENT HOUSE  
TO BE BUILT OF  
NATCO XXX HOLLOW TILE



DESIGN submitted by WILLIAM J. MOONEY  
23 Olmstead Street, Jamaica Plain, Mass.

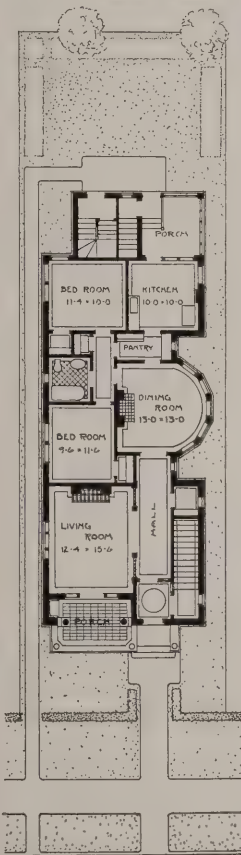
# THE NATCO TWO-APARTMENT HOUSE



DESIGN submitted by WALTER B. PHILLIPS  
2808 Benvenue Avenue, Berkeley, Cal.

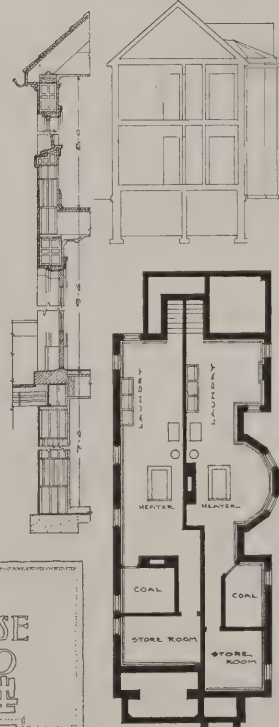


# THE NATCO TWO-APARTMENT HOUSE



**-COVERAGE-**

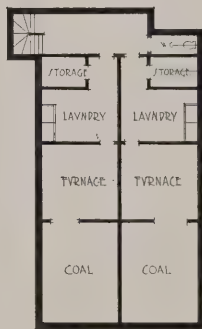
FRONT WING	235-21-31 = 15500
MIDDLE WING	195-21-30 = 12300
DINING ROOM EXTENSION	5-4-10-275 = 1375
REAR WING	235-11-29 = 7980
REAR STAIRCASE	73-9-26 = 1710
PLVS 33-9-17 =	505
FIRST STORY PORCH	23-4-19-5 = 150
SECOND STORY BALCONY	23-23-10-4 = 25
<b>TOTAL</b>	<b>39545</b>



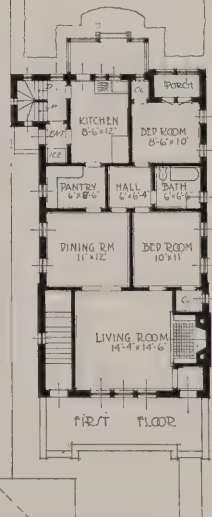
~ DESIGN FOR ~  
A TWO-APARTMENT HOUSE  
TO BE BUILT OF NATCO  
XXX HOLLOW TILE SUBMITTED BY 

DESIGN submitted by ALBERT STURR  
63 East 179th Street, New York, N. Y.

# THE NATCO TWO-APARTMENT HOUSE



BASEMENT

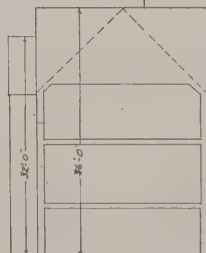


FIRST FLOOR



SECOND FLOOR

**THE CUBAGE**  
 Area of House = 1125 sq. ft.  
 Average Height of all  
 Roofs = 34'-0"  
 Cubage of House = 38250  
 25% of Cubage of  
 Rear Porch = 272 cu. ft.  
 Total = 38522 x 104 = 6934

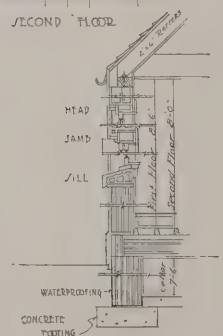


SCALE 1/8" = 1'

ADMITTED BY



DESIGN FOR A  
 TWO-FAMILY  
 APARTMENT HOUSE  
 TO BE BUILT OF  
 NATCO XXX HOLLOW TILE



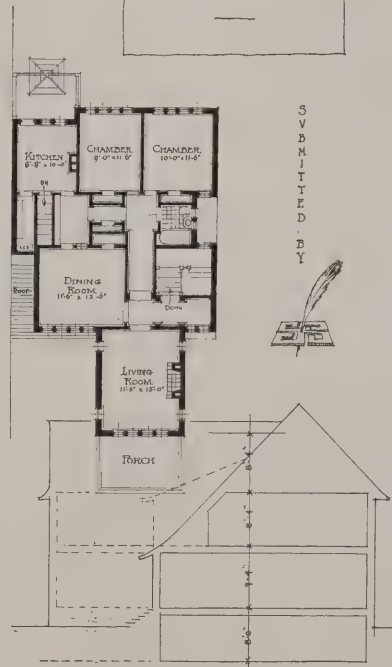
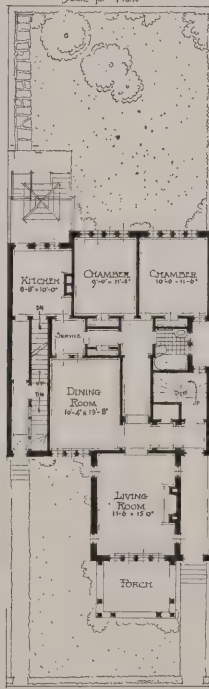
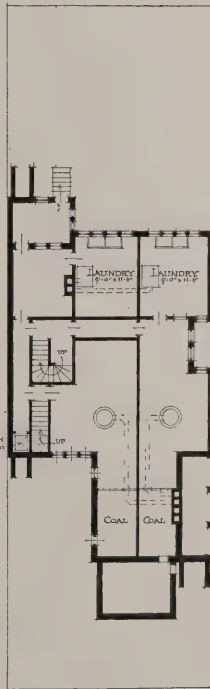
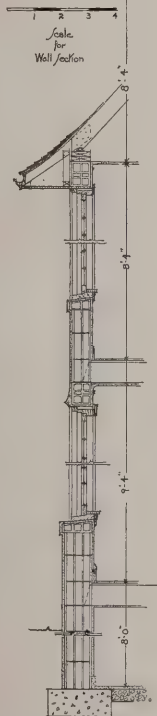
DESIGN submitted by WILLIAM G. SPRAGUE  
 179 Bay State Road, Boston, Mass.



# THE NATCO TWO-APARTMENT HOUSE



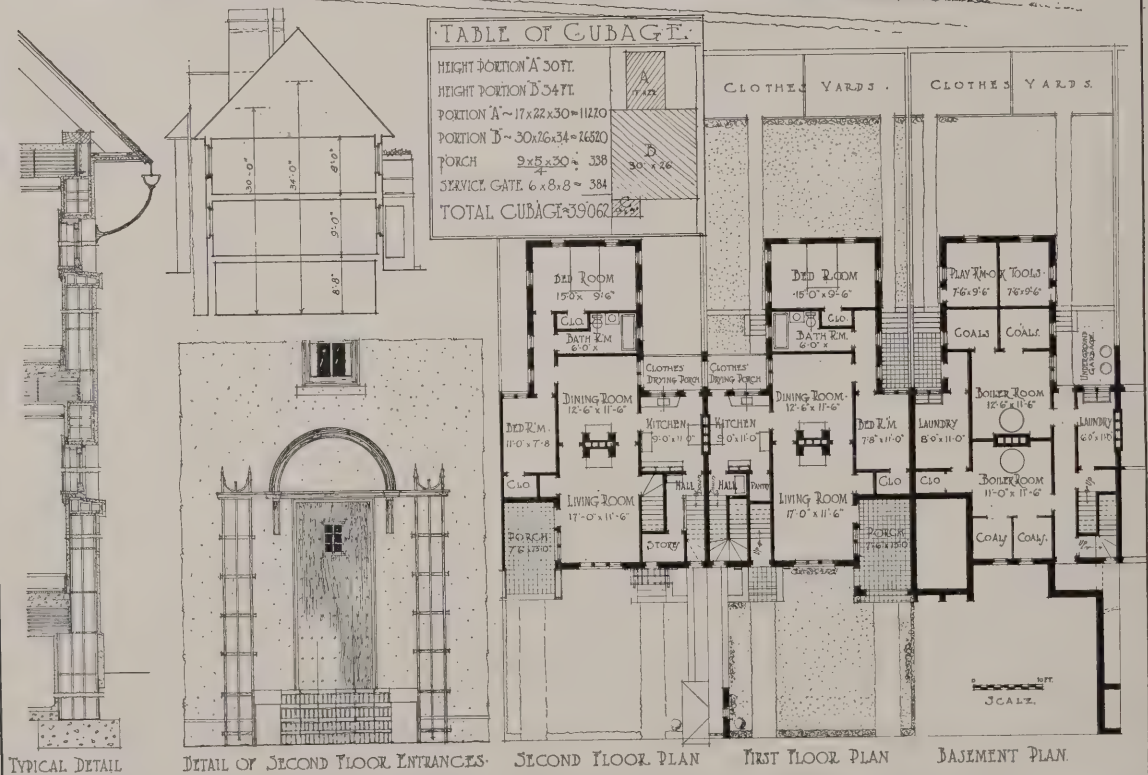
DESIGN FOR A TWO APARTMENT HOUSE TO BE BUILT OF  
 • NATCO XXX HOLLOW TILE •



~ CVBE ~  
 MAIN BLOCK 952 SQ. FT.  
 LIVING ROOM PART 195 SQ. FT.  
 TOTAL 1147 SQ. FT.  
 \* 3 1/2 [TOTAL HT.] \* 38,998 CU. FT.  
 PORCH [1/4] \* 450 CU. FT.  
 CUBE TOTAL 39,448 CU. FT.  
 TOTAL COST @ \$18 PER CU. FT.  
 \$1,120.64

DESIGN submitted by MAURICE FEATHER  
 129 Langdon Avenue, Watertown, Mass.

# THE NATCO TWO-APARTMENT HOUSE



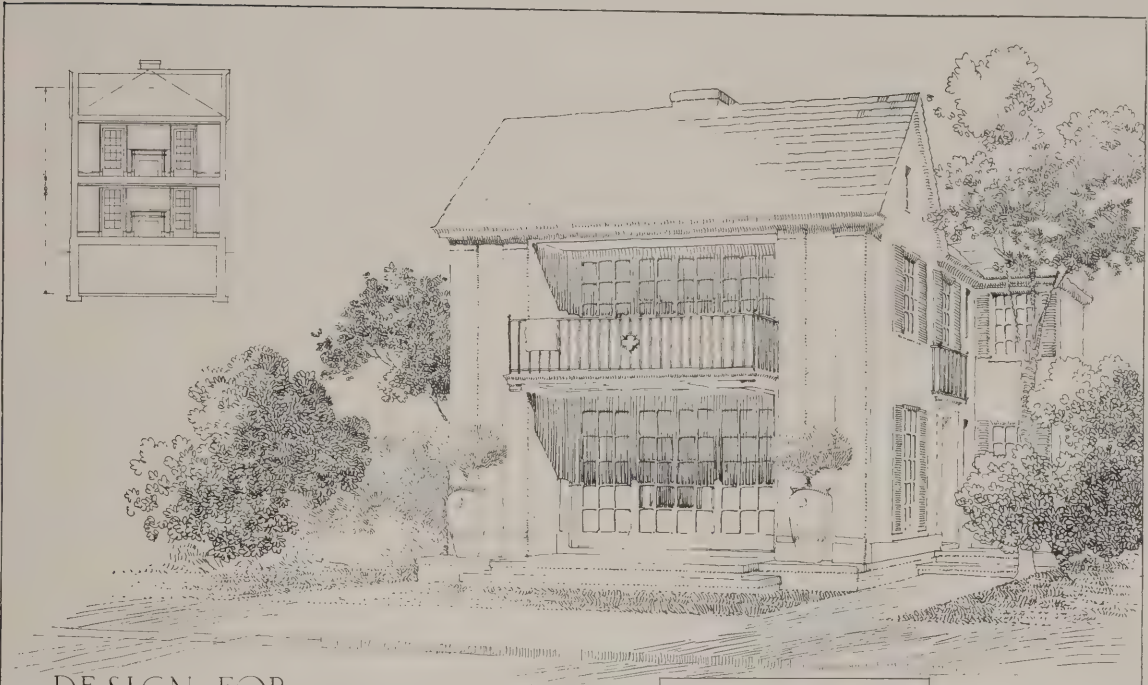
DESIGN FOR A TWO APARTMENT HOUSE TO  
BE BUILT OF NATCO X X X HOLLOW TILE

SUBMITTED BY  
"GYP"

DESIGN submitted by HAROLD THORP CARSWELL  
33 West 42nd Street, New York, N. Y.



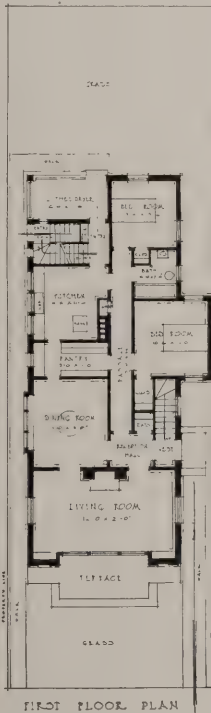
# THE NATCO TWO-APARTMENT HOUSE



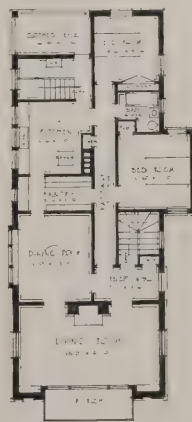
## DESIGN FOR A TWO APARTMENT HOUSE TO BE BUILT OF NATCO XXX HOLLOW TILE

AREA OF HOUSE 1150  
CU. OF HOUSE 34500  
AREA OF PORCHES 100  
1/4 CU. OF PORCHES 750  
TOTAL CU. 35250  
COST OF BUILDING \$7200

DESIGNED BY  
F. D. BULMAN



FIRST FLOOR PLAN



SECOND FLOOR PLAN



BASMENT PLAN

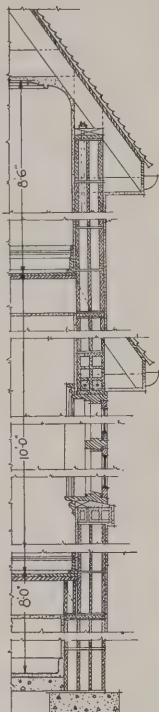
BRICKBUILDER COMPETITION



WALL SECTION

DESIGN submitted by F. D. BULMAN  
6 Beacon Street, Boston, Mass.

# THE NATCO TWO-APARTMENT HOUSE



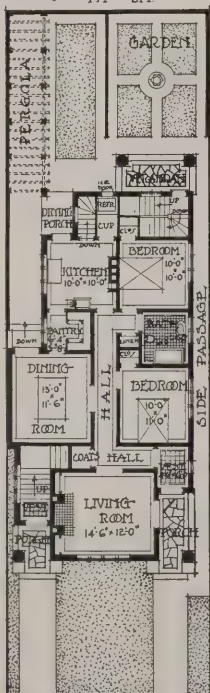
WALL SECTION  
SCALE 1" = 2 FT.



CROSS SECTION

— CUBAGE —  
AREA OF MAIN PORTION OF  
AVERAGE FLOOR PLAN  $17\frac{1}{2} \times 12 = 115\frac{1}{2}$   
DISTANCE FROM BASEMENT FLOOR  
TO AVERAGE HT. OF ROOF  $30$  FT.  
CC OF MAIN PORTION  $115\frac{1}{2} \times 30 = 3465$   
CC OF VERANDA, PORCHES ETC.  
 $(12 \times 5 \times 16) + (10 \times 5 \times 16) + (6 \times 5 \times 16) = 2240$   
TOTAL CC  $3465 + 560 = 35210$  CFT  
COST AT  $18\frac{1}{2}$   $35210 \times 18\frac{1}{2} = 6337.80$

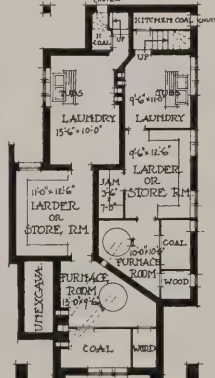
SUBMITTED BY



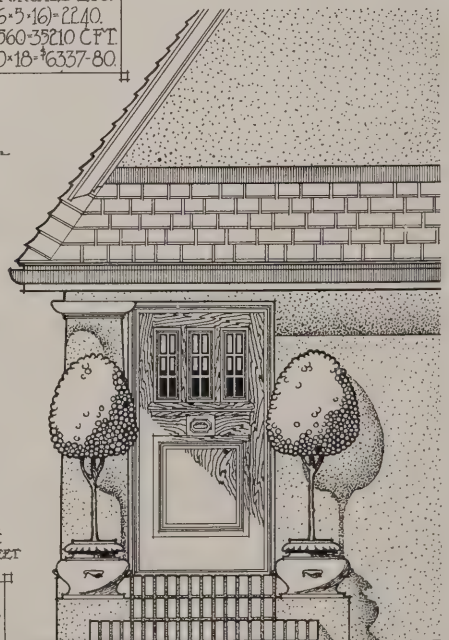
FIRST FLOOR PLAN



SECOND FLOOR PLAN -- BASEMENT PLAN  
SCALE FOR PLANS & CROSS SECTION  $\frac{1}{4}" = 1$  FEET



DESIGN FOR A TWO-APARTMENT HOUSE  
TO BE BUILT OF NATCO XXX-HOLLOW TILE

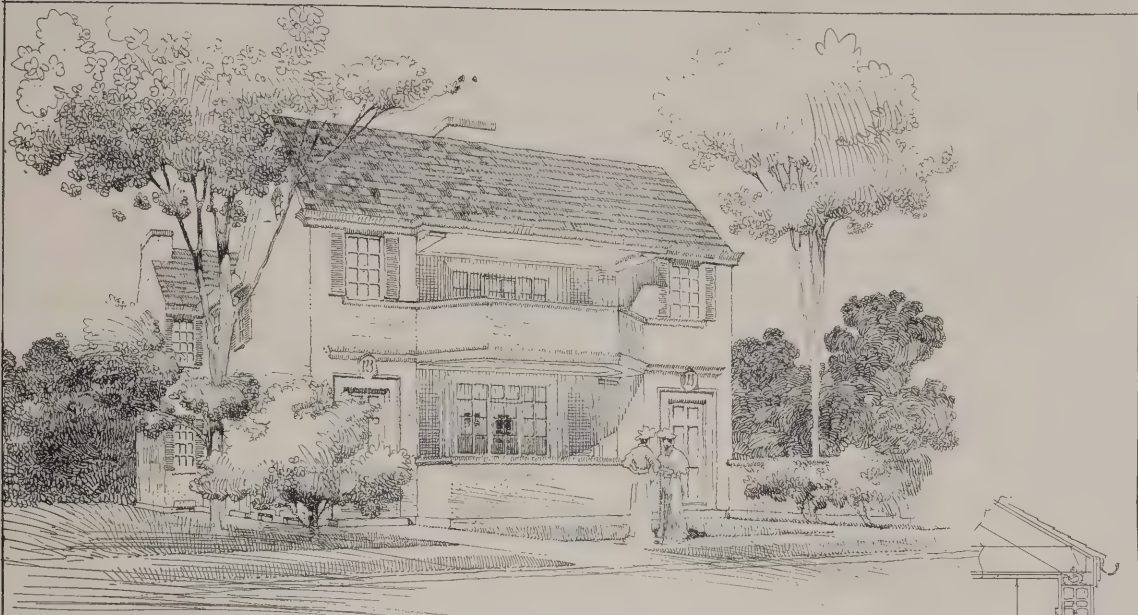


DETAIL OF ENTRANCE  
SCALE  $\frac{1}{2}" = 1$  FEET

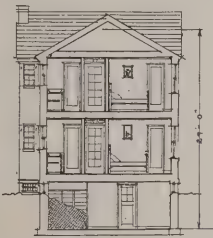
DESIGN submitted by RUSSELL CHISWELL  
250 Grace Street, Toronto, Ont., Can.



# THE NATCO TWO-APARTMENT HOUSE

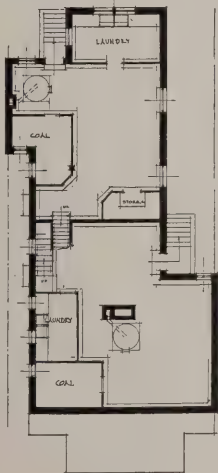


DESIGN FOR A TWO  
APARTMENT HOUSE  
TO BE BUILT OF NATCO  
XXX HOLLOW TILE

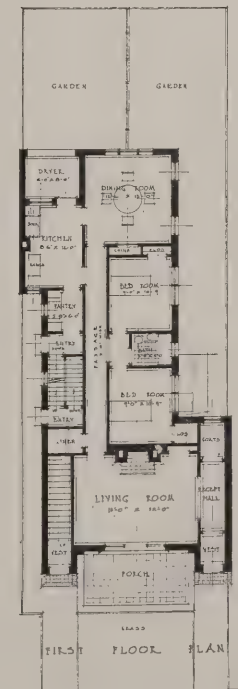


CROSS SECTION

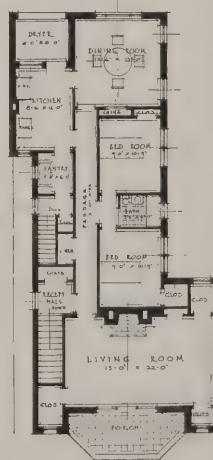
CVBAGE  
HOUSE AREA 1350 SQ. FT.  
HEIGHT 29'-0"  
CVBE 39150'  
PORCH AREA 153 SQ. FT.  
HEIGHT 21'-0"  
CVBE @ 25% 804'  
TOTAL CVBE =  
39954' @ 18¢ =  
COST \$ 7191.62  
SUBMITTED BY



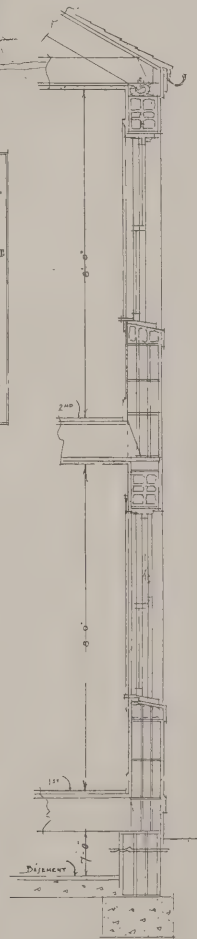
BASEMENT PLAN



FIRST FLOOR PLAN



SECOND FLOOR PLAN



SECTION

DESIGN submitted by FRANK N. ROBERTS  
15 Beacon Street, Boston, Mass.

# THE NATCO TWO-APARTMENT HOUSE

DESIGN FOR A TWO APARTMENT  
HOUSE TO BE BUILT OF  
NATCO XXX HOLLOW TILE



CUBICAL CONTENTS  
OF HOUSE  
56'-6" X 23'-6" X 30'-0"  
= 39840 CU. FT.  
X 18¢TS = \$7171.20



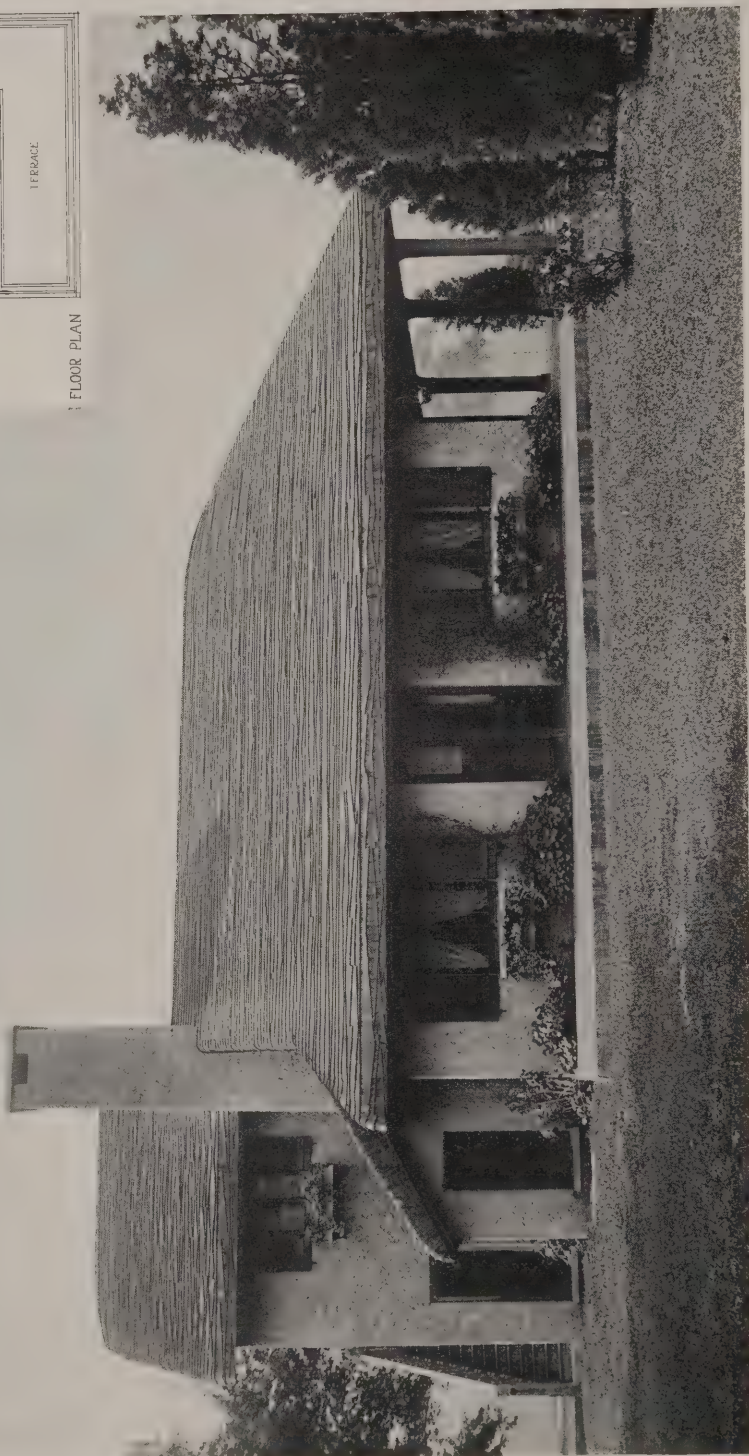
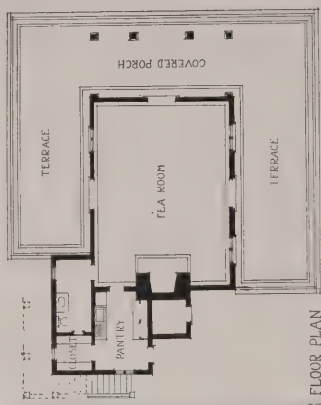
SUBMITTED BY

DESIGN submitted by GEORGE BUCKLAND SMYTH  
1330 Prudential Building, Buffalo, N Y.



**W**ITHIN the following pages there are illustrated a variety of houses that have been built of Natco Hollow Tile, and there are articles which the home builder will find interesting and instructive.

THE NATCO TWO-APARTMENT HOUSE



TEA HOUSE ON ESTATE AT SEABRIGHT, NEW JERSEY  
Walls of Natco Hollow Tile with Stucco Exterior Finish  
JANES & LEO, ARCHITECTS



## THE ARCHITECTURE OF THE SMALL HOUSE

ALBERT JAMES

**I**N all the annals of civilization there is no one feature marking the progress of humanity that stands out so prominently as the love of home. It is love for the home that a man's labor has built and which, from contact with his daily life, has come to breathe his personality and the life of his family, that prompts him to make the greatest sacrifice to preserve its existence. It is upon the love of home and fireside that the strength of the largest nations is built. Let this instinct for a home be stifled and one of the greatest forces for good in the world will be removed.

The modern tendency of massing great numbers of people in our larger cities is steadily effecting this end. It is surely removing the romance of home-building from numberless lives, destroying the individual's personality, robbing him of home life and the love of it, and substituting for these nothing but tawdry makeshifts and cheap amusements. One has but to consider the squalor of the slums in any large city or the endless and monotonous rows of tenements on the outskirts to wonder that any love for home can exist among the inhabitants of these structures.

Furthermore, the element of speculation has entered into home building to destroy individuality farther, and make the dwelling of one man no different from that of his neighbor. We are too ready to believe that the principle of the "ready made" article, which has been applied with efficiency to numberless things we need in our lives, can with equal success be applied to our homes. You have only to look about any suburban community in the United States to realize the widespread effect of this evil and to recognize the futility of the method. The sameness of these dwellings absolutely prevents any personal individuality being expressed; people of various antecedents, temperaments, and tastes are attempting to live in houses which do not differ from one another in the slightest degree. They have sacrificed their home-building instincts and have accepted what the speculative builder offers as a home.

You cannot buy a *home*, however. There are some things that are too personal and intimate to be created for you by another, and your home should surely be the first of these. Four walls do not constitute a home; you must give your own personal thought and effort to their development if they are to enclose your personality and provide a background for your life. Only when this spirit has been infused into our home-building as it was in the days of our forefathers can we expect to see our towns and countryside spotted with simple little homes surrounded by their bright gardens, truly representing the tastes and personalities of their owners.

For many persons the building of a home occurs but once in a lifetime.

It therefore behooves the home-builder to make certain of his steps and build with care that the completed structure will be just as he has long imagined it. One of the prime requisites of a home is that it be artistic in its design. No one will question the value or desirability of an artistic home, but to a great many people there is unfortunately an idea of greater cost associated with any building well designed and planned over one that is not. This idea is a fallacy and cannot be too strongly refuted. To have a home that is good architecturally requires the services of an architect and, of course, this means an actual expenditure of money for his services. No money in the whole process of building, however, can be better spent, for the money that is saved for the client by the architect is more often than not greater than the amount of his commission. In the first place, an architect is able to effect economies in building by eliminating waste space in plan, by so disposing chimneys, plumbing lines, etc., that the utmost convenience and accommodation may be had at the minimum expense. He is further able to obtain artistic effects both inside and outside the building through the use of simple materials in an inexpensive manner. The specifications for materials and the working drawings which he prepares for the guidance of the contractors, with his superintendence of the actual construction, insures the home owner receiving exactly what he has contracted and paid for.

Good architecture is not a matter of expense; it depends primarily upon the exercise of good taste and the selection of appropriate materials. Two houses may contain the same amount of material, yet the one designed by an architect will have refinement, scale, proportion, and a good color scheme, in contrast to the exact opposite in the other, and at no greater cost.

In the design of a house there are two problems involved: the arrangement of the rooms or the plan, and the treatment of the exterior or the elevations. The plan is the first to be considered, for it is in general the more important. It is in the plan that the various needs of the owner are provided for: the exact number and size of rooms, location of stairs, baths, chimneys, etc. With a well proportioned plan worked out, the elevations are then designed to provide the enclosing walls and roof. It is the opinion of most architects that with a well studied plan, the various portions of which are carefully related to each other, the elevations naturally take a pleasing form, providing a good architectural mass and outline for the building.

The keynote of the small house should be simplicity, and this should extend to both plan and elevation. In the plan emphasis should be given to the rooms that are lived in chiefly, making them as large as possible, and reducing to the minimum space allowed for halls, stairs, and passages used for communication only. In the small house it is a waste of valuable space



to provide a large hall. A small area will perform all the duties of the hall and it can be so arranged that generous openings will lead to the main rooms, removing any cramped effect at the entrance. In many cases the stairway need not ascend from the entrance hall. In fact, in a small informal house there are many reasons for placing the stairs at one side of the living-room. This conduces to a more economical use of floor space as well as more intimate family life, and often in conjunction with a seat or fireplace gives to the living-room just the feature to make it individual.

Similarly, kitchens are no longer required to be large. By the means of built-in cupboards, carefully divided and proportioned for supplies, dishes, cooking utensils, etc., everything may be brought together within a small radius, thereby making the room a workable one and reducing to the minimum the number of steps taken in the course of a day's work.

In the exterior of the small house the one requirement for a good architectural effect, and the most difficult to have appreciated, is simplicity. A satisfactory design depends upon the proportions of height, length, and breadth, size of window and door openings and their grouping. It is not necessary to encumber the walls with gables, porches, and bay windows to produce architecture; in fact, the average small house becomes more artistic and better architecturally as these features are eliminated. The large house can stand a variety of treatments, but the small house must depend upon a single idea, carefully worked out with only good proportion and perfection of detail for its embellishment. With the pleasing surface textures to be given the stucco wall coating of Natco Hollow Tile, large wall surfaces made by combining the windows in groups instead of scattering them singly will many times give a very simple and inexpensive house an appearance of great dignity. The roof lines and cornices should be kept low to make the building fit into its site. The one feature which unmistakably stamps the house built without an architect's design is its extreme height, bearing no proportion to the width or length and preventing the house having any of the charm which is so admired in the long, low houses of Colonial days.

It may be for purposes of economy that the home-builder decides to erect a two-apartment house so that the rent of one apartment may provide an income to apply on the cost of the building. In this event he need not forego the pleasure of having a home any less attractive or artistic than the single family house, as the many designs in this book will show. The same principles of design to be observed in the small house may be applied to the apartment house with equally good results.

The two- and three-family apartment house has received far worse treatment at the hands of the speculative builder than any other type of dwelling and it is rare indeed to find one that can claim to have any home

atmosphere whatever. The problem of planning such a building is naturally more difficult than that of a single house, yet it is possible of many interesting solutions. The living-room, with a small sun-porch, may be grouped about the entrance vestibule at the end of the building having the most suitable exposure or outlook, while the chambers and bath-room at the opposite end may be reached from a lobby separated from the rest of the apartment.

It is not necessary to endure the shortcomings of the typical arrangement in the speculative building with its row of cube-shaped rooms opening one after another from a long, narrow, and badly lighted hallway. The natural ingenuity of the architect will take advantage of the exposure to provide spacious and well lighted living-rooms on the southern and western sides of the building, arranging the service quarters and other little-used rooms with the less desirable exposures.

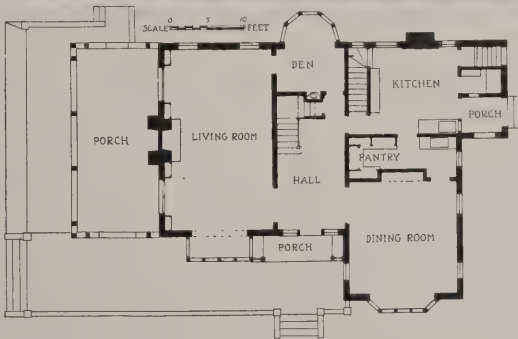
The porch, which has become an inseparable part of the American house, can be made an enjoyable feature of the apartment, but it should not be a covered open space merely, attached to the front of the building, doing more harm than good by shutting off sunlight and air from the principal living-room. It can be located on the side of the building if the lot is wide enough, or it can be made an actual part of the room from which it opens by enclosing it in glass and having large glazed doors opening into the room so that no air and sunshine will be lost and making it as useful as an added living-room in winter as well as in summer.

A tendency towards simpler living is now beginning to be felt in many parts of our country and its mark should soon be noted in our architecture, as well as our people. No greater good for the architectural value of our homes can come from this influence than the lesson that the elimination of useless ornament and the adoption of simple constructive forms will add to their comfort as well as beauty.

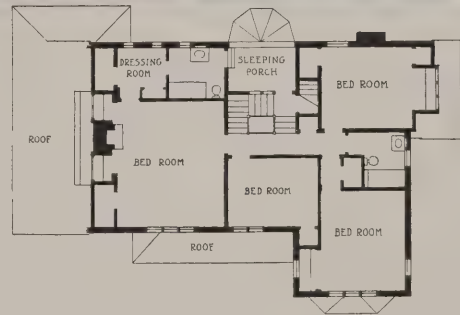




# THE NATCO TWO-APARTMENT HOUSE



FIRST FLOOR PLAN



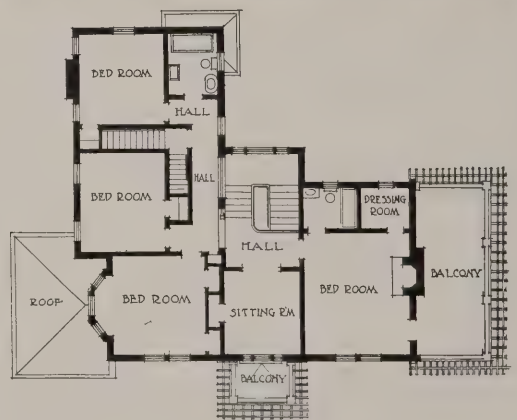
SECOND FLOOR PLAN

HOUSE AT BEECHMONT PARK, NEW ROCHELLE, N. Y.  
Walls of Natco Hollow Tile with Stucco Exterior Finish  
H. S. WATERBURY, ARCHITECT

THE NATCO TWO-APARTMENT HOUSE



FIRST FLOOR PLAN

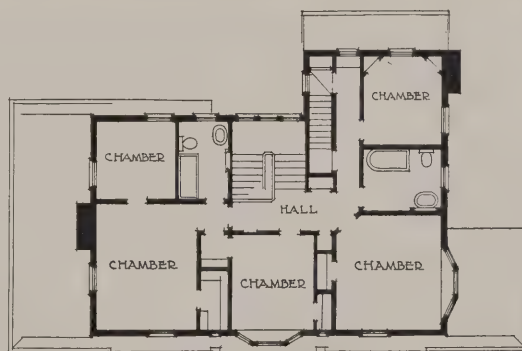
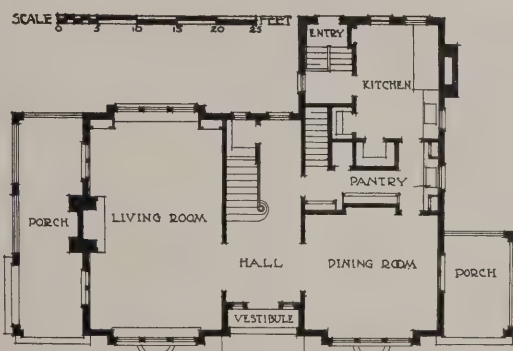


SECOND FLOOR PLAN

HOUSE AT ENGLEWOOD, NEW JERSEY  
 Walls of Natco Hollow Tile with Stucco Exterior Finish  
 GRANVILLE W. DEXTER, ARCHITECT



# THE NATCO TWO-APARTMENT HOUSE



HOUSE AT HACKENSACK, NEW JERSEY  
Walls of Natco Hollow Tile with Stucco Exterior Finish  
FRANK EURICH, JR., ARCHITECT

THE NATCO TWO-APARTMENT HOUSE



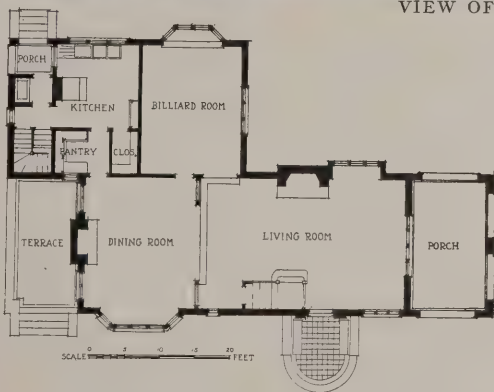
HOUSE AT GREENWICH, CONN.  
Walls of Natco Hollow Tile with Stucco Exterior Finish  
SLEE & BRYSON, ARCHITECTS



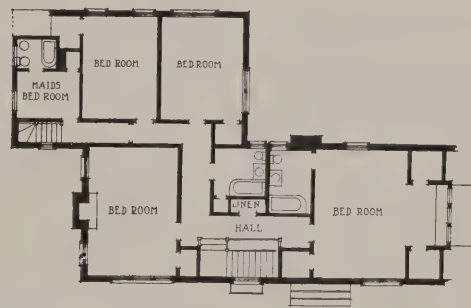
# THE NATCO TWO-APARTMENT HOUSE



VIEW OF SIDE AND REAR



FIRST FLOOR PLAN



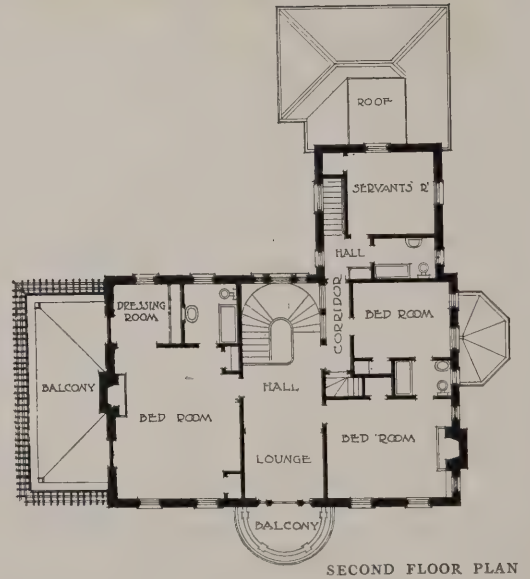
SECOND FLOOR PLAN

HOUSE AT GREENWICH, CONN.  
Walls of Natco Hollow Tile with Stucco Exterior Finish  
SLEE & BRYSON, ARCHITECTS

# THE NATCO TWO-APARTMENT HOUSE



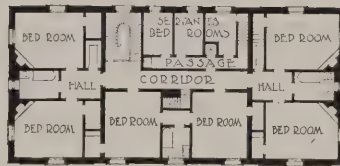
SCALE 0 5 10 15 20 25 FEET



HOUSE AT PALISADE, NEW JERSEY  
Walls of Natco Hollow Tile with Brick Exterior Finish  
GRANVILLE W. DEXTER, ARCHITECT



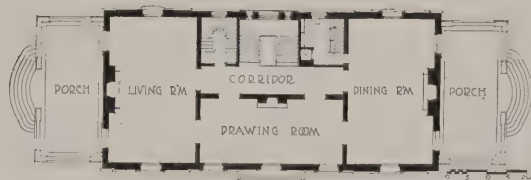
# THE NATCO TWO-APARTMENT HOUSE



SECOND FLOOR PLAN



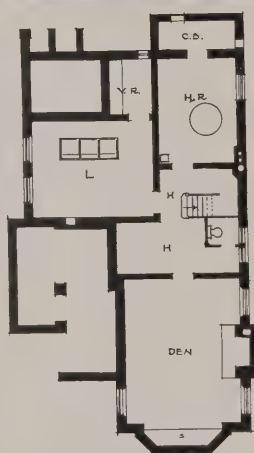
BASEMENT FLOOR PLAN



FIRST FLOOR PLAN

HOUSE AT WASHINGTON, D. C.  
Walls of Natco Hollow Tile with Stucco Exterior Finish  
DONN & DEMING, ARCHITECTS

# THE NATCO TWO-APARTMENT HOUSE



BASEMENT FLOOR PLAN



FIRST FLOOR PLAN

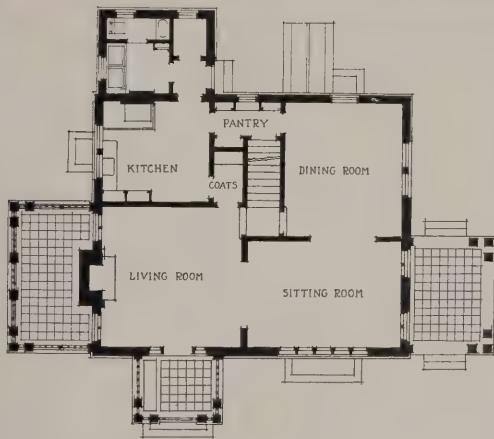


SECOND FLOOR PLAN

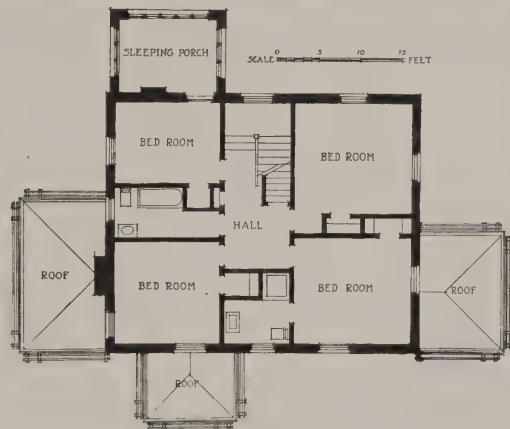
HOUSE AT DETROIT, MICHIGAN  
Walls of Natco Hollow Tile with Stucco and Brick Exterior Finish  
ROLAND C. GIES, ARCHITECT



# THE NATCO TWO-APARTMENT HOUSE



FIRST FLOOR PLAN



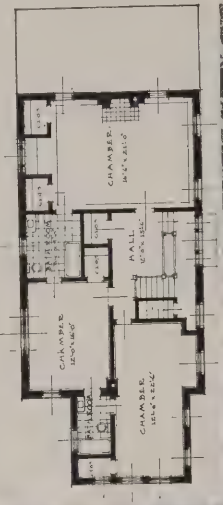
SECOND FLOOR PLAN

## HOUSE AT QUAKER RIDGE, N. Y.

Walls of Natco Hollow Tile with Stucco Exterior Finish

KENNETH CLARK, ARCHITECT, ARTHUR M. DUNCAN, SUPERVISING ARCHITECT

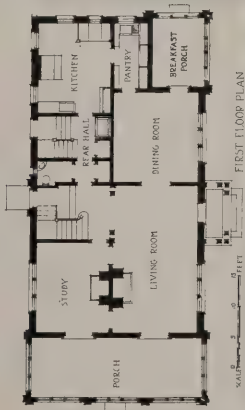
# THE NATCO TWO-APARTMENT HOUSE



HOUSE AT ENGLEWOOD, NEW JERSEY  
Walls of Natco Hollow Tile with Brick Exterior Finish  
CARETTO, FORSTER & KING, ARCHITECTS



# THE NATCO TWO-APARTMENT HOUSE



FIRST FLOOR PLAN



SECOND FLOOR PLAN

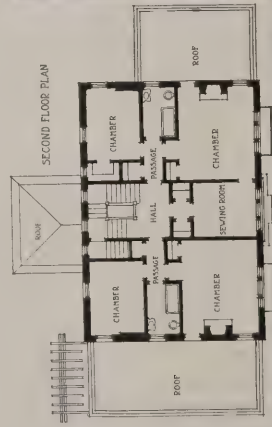


HOUSE AT GARDEN CITY, LONG ISLAND, N. Y.  
Walls of Natco Hollow Tile with Brick and Stucco Exterior Finish  
ALFRED BUSSELLE, ARCHITECT

# THE NATCO TWO-APARTMENT HOUSE



FIRST FLOOR PLAN

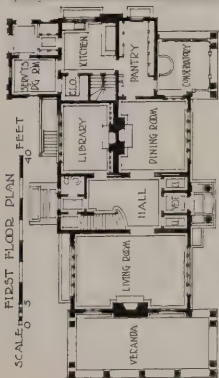


SECOND FLOOR PLAN



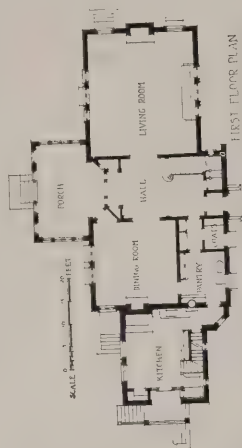
HOUSE AT STAPLETON, STATEN ISLAND, N. Y.  
Walls of Natco Hollow Tile with Stucco Exterior Finish  
HENRY G. OTTO, ARCHITECT





HOUSE AT HACKENSACK, NEW JERSEY  
Walls of Natco Hollow Tile with Stucco Exterior Finish  
L. S. BEARDSLEY, ARCHITECT

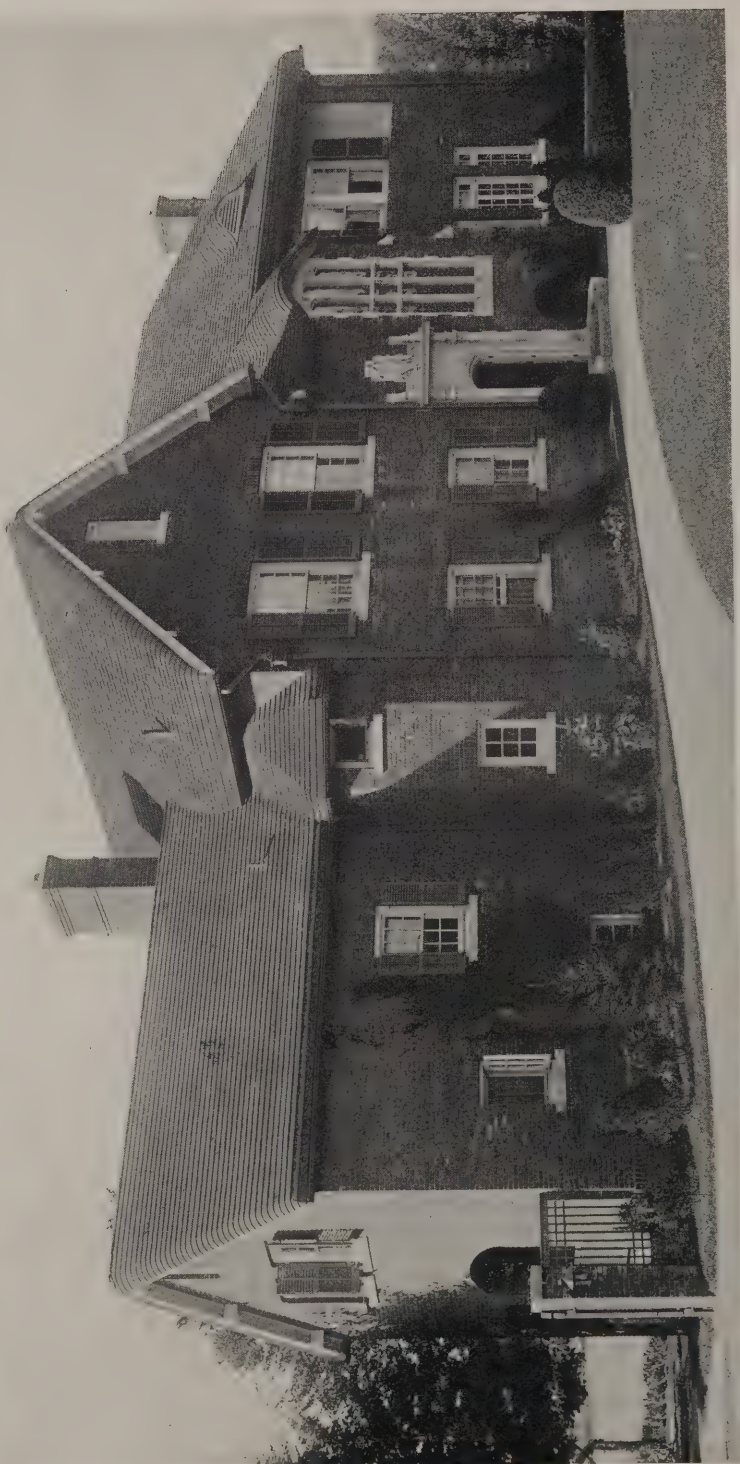
# THE NATCO TWO-APARTMENT HOUSE



FIRST FLOOR PLAN

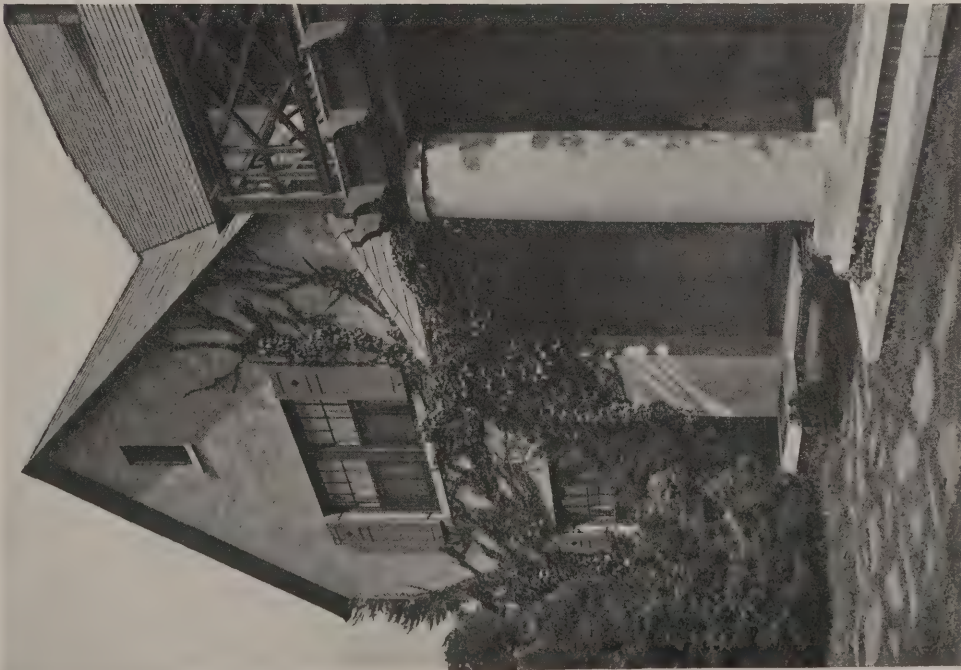


SECOND FLOOR PLAN



HOUSE AT LARCHMONT, NEW YORK  
Walls of Natco Hollow Tile with Brick Exterior Finish  
CHARLES A. VALENTINE, ARCHITECT

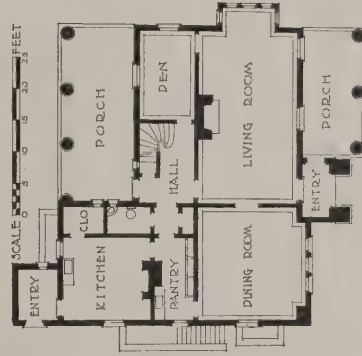




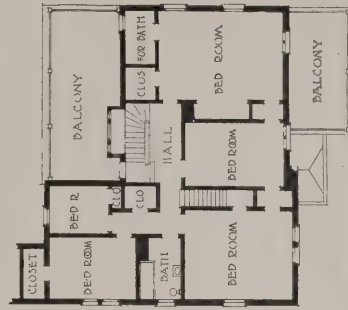
DETAIL OF ENTRANCE



VIEW OF HOUSE FROM ROAD



FIRST FLOOR PLAN

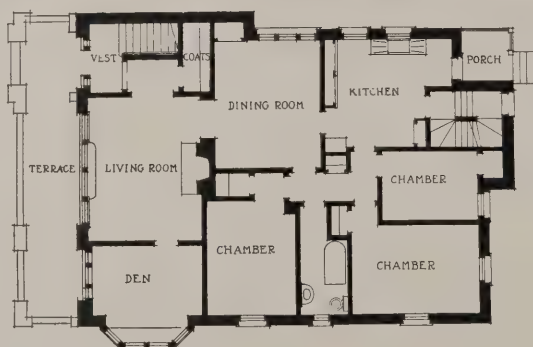


SECOND FLOOR PLAN

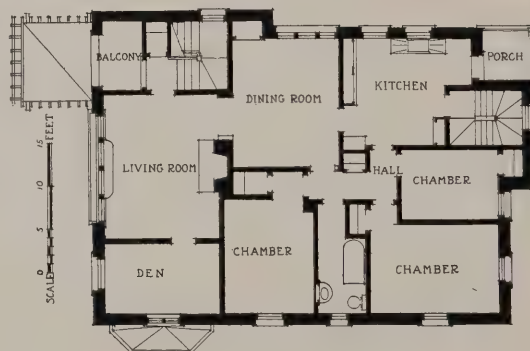
HOUSE AT HASTINGS-ON-HUDSON, NEW YORK  
Walls of Natco Hollow Tile with Stucco Exterior Finish

R. H. SHREVE, ARCHITECT

# THE NATCO TWO-APARTMENT HOUSE



FIRST FLOOR PLAN



SECOND FLOOR PLAN

TWO-APARTMENT HOUSE AT DETROIT, MICHIGAN  
Walls of Natco Hollow Tile with Stucco Exterior Finish  
ROLAND C. GIES, ARCHITECT



## PRACTICAL ADVANTAGES OF NATCO HOLLOW-TILE CONSTRUCTION

DAVID WILLIAMS

EVERY person who builds a home for himself is anxious to obtain as good an investment, and the maximum comforts and space, as his money will afford. The average man builds but once in his lifetime and it is therefore important that he give study and thought to the problems involved. The cost of a building is, of course, one of the important factors, and in considering this phase of building it is the average practise to lay all emphasis on the first cost, but it is in limiting consideration to the initial expense that the first mistake in building is made. The total cost of a structure is not represented by the contract figure. There are the expenses of upkeep and repairs, insurance rates and percentage of deterioration, to be figured before the cost of a building at any given period can be computed. It is with these elements of the building problem, which are frequently passed over with little or no attention by the average home-builder, that this paper will deal.

When the home-builder approaches the time to build, he perhaps first determines the amount of space and accommodations the requirements of his family demand. The second and equally important point is the selection of material of which his house shall be built. He has a wide field to choose from and in the selection he can be guided by his natural fancy, the experience of his friends, or the amount of money he can expend for building purposes. It is the latter condition which more often than not is the deciding factor, and it is on the cost of material that he receives the most misinformation and is most often influenced by ill-formed opinions.

Americans have, for the most part, built wooden houses for generations until there has sprung up a prejudice in favor of wooden houses. Americans have also for generations suffered heavier fire losses than any other nation on earth, and their prejudice has in this respect proved costly to them. The home atmosphere which wooden houses are believed to possess is no greater than the home atmosphere of the English stone cottage or any European home that is safe from fire, and it is furthermore not so likely to endure, for the English cottage is capable of standing for centuries, to pass from one generation to another, gathering and holding more associations as it continues to be lived in. Home atmosphere is not so much a matter of materials as it is suitability in design and arrangement of the house to the family that occupies it.

Natco Hollow Tile has been used to build some of the finest homes in America that express the highest standards of American architecture. Its great versatility enables the architect to adopt any style of architecture he

may desire or to meet the tastes of any client. It can with equal effectiveness form the walls of the quaint English cottage, the dignified Georgian or Colonial house, and the Spanish or Mission type of dwelling.

There has been in recent years an awakening on the part of the public to a realization of the inflammability of the average American home and the importance of finding an inexpensive and commercially practical type of fireproof dwelling. Many factors have aided in bringing about this changed viewpoint and perhaps chief among them is the adaptability to house construction of hollow tile, developed originally as a light weight insulation and fire protection for the steel frame of the modern office building. Other factors, partially responsible, are the constantly increasing cost of lumber in all forms, the increase in carpenters' wages which since 1890 has been about 110 per cent while masons' wages in the same period have increased only about 75 per cent, the fact that the efficiency of carpenters has decreased in that time while that of masons has if anything slightly increased, and what is of equally great importance, the development of an architectural treatment highly artistic and appropriate to the materials that will resist fire.

The hollow clay tile is the most inexpensive and practical of the permanent materials. All the imperfections of other types of masonry walls have been overcome in this material. It is obviously more economical than brick because of the saving in labor occasioned by using one tile of approximately a foot square instead of fifteen or more bricks and an incidental saving of labor in handling a larger unit of material. The dead air spaces between the outer and inner surfaces of the tile, divided by vitrified partitions impervious to water make it impossible for moisture to pass through the wall, so that it is not necessary to furr the inside face before plastering, as it is with all other types of masonry walls.

The economy of Natco walls is not confined to their construction alone but applies to the operation of the buildings as well. The dead air space in the tiles forms an effective insulation against cold so that a less consumption of coal is needed to heat the building. It has been estimated by heating engineers that the difference in coal consumption is as large as ten per cent in favor of the hollow tile house over a similar one of other materials.

The first cost of a small wooden house is but slightly lower than that of a similar house constructed of a permanent material, like hollow tile, and each succeeding year sees the difference in cost becoming less and less owing to the increasing scarcity of lumber and its increasing price.

But in five years what is the actual value of the wooden house compared with that of the house built of Natco Hollow Tile and what are their relative actual costs? Everyone knows that as soon as a house is completed it begins to deteriorate. It is logical, therefore, to select the material which at a reasonable cost shows the least deterioration. Wood, as is universally



known, is a material which deteriorates rapidly—it is necessary to paint the exterior of any wooden building every two or three years to protect it from the action of the elements. The timbers used in construction, moreover, owing to the action of the weather, shrink or swell, causing settlements to occur in the building, which cracks interior plaster and often does more serious damage. Each of these occurrences means expenditures for repairs and upkeep which must be added to the original cost of the building. Insurance, while not a large item in the small house, shows a much higher rate for a wooden house over one with walls of hollow tile, for even if tile is used for the exterior walls only, the major portion of the building is fireproof and this is in turn reflected in the lower insurance rate.

The wooden house over a period of five years, therefore, shows a greater cost than the hollow tile house for the same period. So to the original cost of the wooden house must be added the expenses of painting, repairs, and higher rate of insurance, and this final cost must be compared with the original cost of the tile house with the addition of only a small item for insurance and a minimum figure for upkeep. Similarly, if the wooden house is costing more to keep in repair than the tile house, its materials must be deteriorating faster, so that at the end of five years the actual market value of a wooden house is less than a similar house of tile, other conditions such as location, etc., being equal.

This difference, which is large at the end of five years, does not diminish with additional years, but increases so that at the end of ten years a comparison of costs should easily convince a home-builder that his greatest concern should not be with the first cost of his house but with its upkeep and repairs and the permanency of its materials.

With the desire on the part of the home-builder for a fireproof house that will insure safety to his family and protection to his possessions at all times, he can at a little greater expense have fireproof floors and partitions, instead of wooden floors and partitions as has been the general custom. In addition to the fireproof qualities, the evils of shrinkage in wooden beams and the consequent damage will be avoided through the use of Natco tile in combination with reinforced concrete. Such a floor is inexpensive and when constructed has an under and upper surface all ready to receive the plaster of the ceiling below and the floor finish above. The simplest and most inexpensive top floor is of concrete, treated with a smooth surface and with any color desired. We are not yet accustomed to such floors, it is true, but they are in use in England and on the continent and the ease with which they may be kept in order and their low cost of maintenance will without doubt make them popular, before any great length of time, for the American home as well. The usual oak or pine flooring may be applied to the fireproof floor structure if desired, without seriously limiting the fireproof qualities

of the house. It is readily apparent to anyone that a permanent, fireproof floor is of particular advantage for the first or ground floor, even if this form of floor is not used for the others. It practically insures fire protection for the entire house because insurance statistics state the greatest number of fires in dwellings occur from causes originating in the cellar, as overheated furnaces, rubbish, defective flues, etc. In addition to affording this desirable protection it keeps the ground floor warm and vermin proof, a condition not possible with the ordinary wooden floor construction.

Recent careful estimates of the cost of a moderate sized house using the various materials most common throughout the country show the following results:

<i>Kind of Construction</i>	<i>Average Cost</i>	<i>Percentage of Increase</i>
House built of wood with clapboarded walls	\$6,759.95	0
Of wooden construction with shingled walls	\$6,868.80	1-6/10
Stucco on wooden construction	\$6,952.90	2-9/10
Stucco on hollow tile	\$7,187.65	6-3/10
Brick veneer over boarding	\$7,226.44	6-9/10
A hollow brick wall 10 inches thick	\$7,374.48	9-1/10
Brick veneer outside of hollow tile	\$7,483.16	10-7/10
A 12-inch solid brick wall	\$7,641.00	13

A comparison of these bids to establish a percentage of cost on the various types—starting with the first figure, on the clapboarded house, as 0—is shown in the right hand column. By this it will be seen that the stucco on hollow tile constructions costs but 6-3/10 per cent more than the cheapest and most ordinary form of construction. The minor repairs, painting of the exterior of the wooden house, and higher insurance rate will, as pointed out in the previous paragraphs, total more than this difference in a very few years. These figures do not include the cost of making the floors and partitions fireproof, but the total cost of such a house would not exceed 12 to 15 per cent more than the cost of the cheapest construction shown in this table.





## THE 1916 CODE OF COMMON SENSE MORALS

### AND WHAT IT HAS TO DO WITH FIGHTING THE FIRE PERIL

**T**HE Ten Commandments are still intact and the Golden Rule is more or less in general vogue, in 1916.

But John Smith, with the advantage of modern education and living in a country of over 91,000,000 population, has many more duties to society and moral responsibilities than John Smith of several centuries ago—who had perhaps a rudimentary knowledge of the three R's and lived the simple life of a colonist.

Society demands more of the cultured individual.

And ignorance and carelessness are now being added to the decalogue of crimes.

"Safety first," to guard against accidents, preventives for disease, fire, etc., is being insisted upon by society, because each mishap to the individual works some injury or loss to the community as a whole.

The American love of Fair Play is encouraging each person to do his part. Waste vs. Conservation is a live issue. The nation grows more and more concerned about the economic loss that results from loss of life or resources or energy.

Sins of omission are becoming as reprehensible as sins of commission.

### WHO PAYS

**W**HATEVER and wherever a fault occurs, someone must pay; and society now recognizes that it finally must foot the bill.

Great as this progress has been, America still has charged against it the crime of carelessness in fighting the fire peril.

In 1914, the United States suffered an economic loss of \$221,000,000 from fire disasters. New York contributed \$8,217,000 of this loss; Chicago, \$6,018,000; Philadelphia, \$2,791,000; Boston, \$2,898,000; San Francisco, \$1,037,000. Nor does this take into account the economic loss resulting from lives sacrificed. Baltimore, with a population of 600,000, boasts of only 1978 fires and a loss

of only half a million dollars by fire in 1913!

Ignorance, again, is no excuse. The use of NATCO HOLLOW TILE in building construction is recognized as an absolute safeguard against fire loss. Yet negligence in not taking full advantage of this protection against fire still persists. And Baltimore, despite its boast, spent over \$1,000,000 to maintain its fire department in 1914. New York alone has over 250 fire houses and employs 5000 firemen!

Fire is dreaded as is no other menace—nevertheless this tremendous toll is paid to combat fire after it has appeared, rather than concentrating every energy in preventing it.

### FIRE PREVENTION POSSIBLE

**E**VERYBODY knows about effective fireproofing. It is a widely-known fact that the skyscrapers depend upon NATCO HOLLOW TILE for safety, although, through a short-sighted policy, it sometimes happens that smaller buildings use NATCO HOLLOW TILE for the exterior walls but neglect it in floors and partitions, closet and vault walls, inclosures for elevator shafts, etc. Naturally, when only the skeleton is fireproofed, the building is not fireproof.

Residences, schoolhouses, etc., however, are too frequently not fireproofed. It seems inconceivable

that men would intentionally protect the home of their business interests and neglect the home of their family. The mere intimation of such a moral crime is too monstrous!

Certainly, it is at least a man's duty to protect his family—even if he has no concern for himself, his possessions, and the safety of neighbors the fire may jeopardize. A man would not keep his securities in a wooden vault; by the same token, he should not house his family in a wooden or non-fireproofed building.

And NATCO HOLLOW TILE is made in



various forms and sizes to meet every exigency of construction and every type of building—the smallest residence as well as the skyscraper.

Yes, Americans are simply careless—even more so than Europeans—about this responsibility. In Germany, for instance, fire is charged as a crime against the owner or tenant of the burned

building. He must prove he is not responsible, either by accident or design, for the fire. Unless his innocence is clearly shown to the authorities he cannot collect insurance, and he must pay the fire department for their time as well as remunerate any neighbors whose houses may have suffered by the blaze.

### SQUARE DEAL IS THE PROFITABLE WAY

THERE are also many economies in employing NATCO HOLLOW TILE for residences. The interior plastering may be applied directly to the surface of the tile, thus avoiding the expense of the usual lathing. The labor of construction is reduced because of the large size of the tile and the resulting rapidity with which a wall may be built. The self-contained air blankets make the tile a non-conductor of heat and cold, assuring greater heat and smaller coal bills in winter (and lower inside temperature in summer). The exterior finish is permanent. The painting expense is low. There is no deterioration; repairs are avoided; cost of upkeep is cut. Yet the first cost of NATCO averages about 5 to 10 per cent below solid brick construction and rarely goes higher than 10 to 25 per cent above wood construction, depending upon the extent to which

fireproofing is carried. Thus investment value is greatly enhanced.

Besides, NATCO TILE is damp-proof, vermin-proof, and sound-proof. It makes a sanitary and comfortable house.

All these advantages are mentioned apart from the peace of mind that NATCO HOLLOW TILE brings to the occupants of a house, in absolutely controlling fire and fire risk.

NATCO XXX, for residences, has a double cross web and every web and shell of every tile as set in exterior and bearing walls comes in direct alignment and under complete compression. The NATCO XXX wall represents the utmost in structural solidity and strength. Fireproofing such as this is the preventive of the fire peril—that society in time will make a legal requirement.

### THE CALL FOR COMMON SENSE

COMMON SENSE, and not altruism, is needed in fighting fire. The National Fire Proofing Company, with its organization and expert service covering the entire country, is doing more than any altruistic movement or fire department expenditure can do toward pointing the way to safety. NATCO itself is the solution of the problem. There are imita-

tion products, but the imitation is obviously imperfect without the years of experience and accumulated knowledge which have produced the original.

Every house-builder can—and every tenant should—join the movement to fight this great economic loss and danger of fire. Self-interest urges it, society calls for it.

### NATIONAL FIRE PROOFING COMPANY

PITTSBURGH, PA.

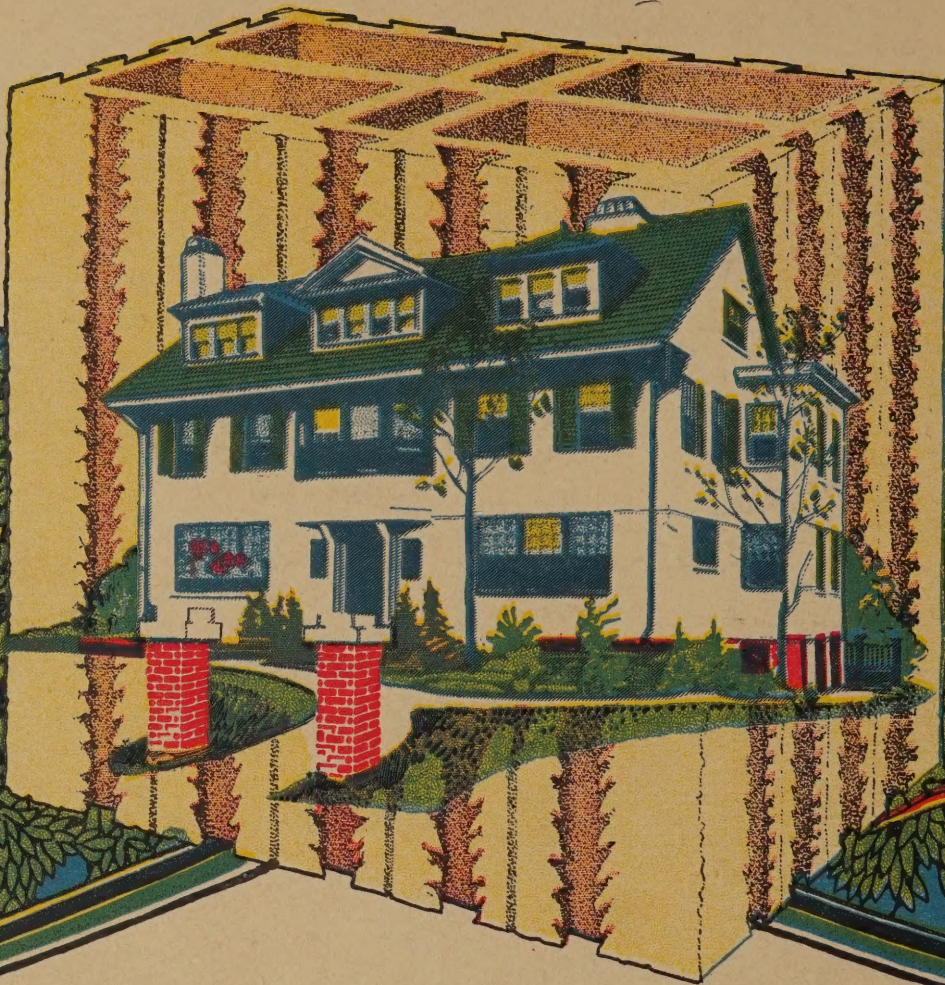
New York      Chicago      Boston      Syracuse  
Philadelphia      Washington      Detroit

Twenty-three factories in the United States, and also at Hamilton, Ontario, Canada









## Safety Surrounds This House!

It is built—walls, floors, ceilings, and partitions—so that the most dreaded of all dangers cannot touch the family it protects. It is more than a beautiful house—it is safe—absolutely fireproof—built throughout of

### NATCO·HOLLOW·TILE

When this owner was building of Natco, by the wise advice of his architect, he found it essentially economical—although Natco quality is such that it is widely specified for the greatest of skyscrapers. And when his house was done, he found it warmer in winter—saving his fuel bills, and cooler in summer—saving the health of his family. Natco is the most modern of all building materials.

If you are thinking of building, think just a little beyond mere beauty. Think of com-

fort and economy—and most of all think of safety. For without that the most beautiful house in the world is in constant danger of destruction, with all it contains.

Call upon the Natco Service—free to architects, engineers, contractors—and you. It will save you time and money, and enable you to avoid mistakes and waste. Send for the book, “Natco Houses”—and see what beautiful dwellings have been built of Natco—for wise people who think of safety as well as comfort and beauty.

### NATIONAL·FIRE·PROOFING·COMPANY

FEDERAL STREET, PITTSBURGH, PA.

Offices in All Principal Cities

23 Factories in the  
United States



Also at Hamilton,  
Ontario, Canada

